TECHNOLOGY FAILURE
United Air Lines grounds an underperforming baggage system at Denver's airport. **PAGE 8**

STORAGE VENTURE
Pillar Data Systems, a start-up with $150M in funding from Oracle's Larry Ellison, launches its first disk array. **PAGE 16**

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JUNE 13, 2005 ▪ VOL. 39 ▪ NO. 24 ▪ $5/COPY

Users Wary of Federal Medical Record Plans

HHS secretary unveils public-private scheme to develop standard data-exchange methods

BY HEATHER HAVENSTEIN
NEW YORK

Hoping to overcome one of the key obstacles to the creation of a national IT system for exchanging health data, the U.S. Health and Human Services Department last week unveiled a new plan for developing data standards for electronic medical records.

But even though the lack of interoperability among current IT systems is a problem, several users expressed doubt that the industry can come together and rally around a standards initiative. "It's going to be a major challenge to come up with something we can all agree upon," said Dennis Sato, CIO at Salem Hospital in Salem, Ore.

At the Healthcare Information Management and Systems Society summit here, HHS Secretary Mike Leavitt said the agency plans to work with hospitals, physician practices, insurance companies and vendors to forge interoperability standards

Records, page 47

INSIDE

A civil grand jury in California charges that Santa Clara County is failing in its effort to build an electronic medical records system.

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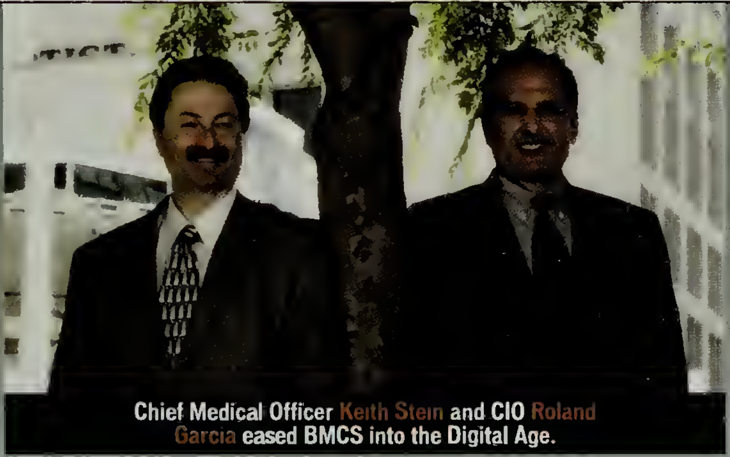
IT Achievers

2005

Ten organizations were recognized for their achievements on IT projects at last week's *Computerworld* Honors Program awards ceremony. Two individuals also won technology leadership awards.

[illegible]

ONLINE EXCLUSIVE: Read case studies about the winning projects. **QuickLink a6120**



Chief Medical Officer Keith Stein and CIO Roland Garcia eased BMCS into the Digital Age.

GENE BEDNAREK/SILVER IMAGE

Here's how Baptist Medical Center South got doctors to buy into wireless handhelds and fully electronic medical records, something other hospitals have failed to do. By Julia King **PAGE 35**

THE PAPERLESS HOSPITAL– Really!

Sarb-Ox Relief Is Too Late to Ease IT Pain

Much of the hardest work has already been done, tech execs say

BY THOMAS HOFFMAN

Speculation continues to abound that the U.S. Securities and Exchange Commission and the Public Company Accounting Oversight Board may make further revisions to the Sarbanes-Oxley Act to help make it easier for companies to comply with the law's requirements.

However, any relief that might be offered would fall short of stemming the pain that many IT departments have had to endure to document their technology controls, IT managers and analysts said last week.

For example, Joseph Antonellis, CIO at State Street Corp. in Boston, said the time, costs and diverted resources needed to comply with Sarbanes-Oxley "create an obstacle for our organization" that has made it harder for the IT department to meet end-user needs.

The law has forced State Street to conduct "a massive amount of documentation and testing to validate what we already knew — that the existing IT control infrastructure and corporate audit activities we've had in place for a long time at State Street are in full compliance with Sarbanes-Oxley."

Sarb-Ox, page 16

ONLINE

Read full coverage of Sarb-Ox on our Web site: **QuickLink a3250**

NEWSPAPER

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06.13.05

Get Ready: The Rules Are Changing

In the Management section: When business processes become commodities, all the rules change, says Babson College researcher Thomas Davenport. Here's what CIOs need to do about it. **Page 38**

Anticipation Game

In the Technology section: Sales of predictive analytics systems are booming as text mining and real-time applications make them more valuable to business. **Page 21**

NEWS

Proof That IT Matters

2005

Several of the 10 award winners in this year's *Computerworld* Honors Program use IT to make a real difference in people's lives. Those who see computers as nothing more than hardware and software might change their minds after reading how technology makes it possible to provide medical care in remote rural areas and deliver aid to disaster victims.

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28 **Security Manager's Journal. Lull in Action Is Time to Tie Up Loose Ends.** The blackout at the end of the quarter gives Mathias Thurman a chance to do some documentation and evaluate new technologies. It also gives him time to consider how the company's growth has affected his staff.

30 **Q&A: Beyond Paper.** Hervé Gallaire, president of the Xerox Innovation Group, discusses real-world applications of research and development and how the company plans to exploit innovation.

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35 **The Paperless Hospital – Really!** For a brand-new hospital whose staff has just a few weeks of experience working in a totally electronic environment, the overall atmosphere at Baptist Medical Center South is strikingly tranquil.

40 **IT Mentor: Alignment: What It Really Means.** Troy D. Kinsey (left) explains how to tell if business and IT are aligned and what to do if they're not.

42 **Career Watch.** There's a new title in corporate IT: senior vice president of data management. Plus, Silicon Valley's top executives are still getting huge pay increases, and we examine the behavioral differences between CIOs and CEOs.

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18 **Michael H. Hugos** sees IT and its reputation standing at a crossroads. Which way they go depends on how practitioners respond to complexity.

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48 **Frankly Speaking: Frank Hayes** knows we'll hear howls from users when hard disk drives that automatically encrypt data arrive, but IT needs such devices.

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View From Offshore: The End of Call Center Entrepreneurship

OUTSOURCING: Richard Mills of Chalre Associates reviews the offshore call center scene. **QuickLink 54792**

Apple's Move to Intel Prompts A Look Back, and a Look Ahead

MACINTOSH: This is not the first time Apple has tackled Mac-on-Intel hardware, says columnist Ryan Faas. But it's the first time it has been done in a way that could prove truly successful. **QuickLink a6100**

Insecurity Through Obscurity

SECURITY: Developers should heed the writings of a 19th century cryptographer, who could teach them a thing or two about designing security into their products, says columnist Jian Zhen. **QuickLink 54856**

'Grid' Storage Is in the Eye of The Beholder (and Vendor)

STORAGE: Clustered and virtualized capabilities are also touted as gridlike, as Robert L. Scheier explains in this article from *Storage Networking World Online.* **QuickLink a6110**

Why Standards Are Important For Wireless Security

MOBILE/WIRELESS: Airespace's Bob O'Hara explains how standards groups and companies work together to foster secure wireless networking. **QuickLink 54938**

What's a QuickLink?

Throughout each issue of *Computerworld*, you'll see five-digit QuickLink codes pointing to related content on our Web site. Also, at the end of each story, a QuickLink to that story online facilitates sharing it with colleagues. Just enter any of those codes into the QuickLink box, which is at the top of every page on our site.

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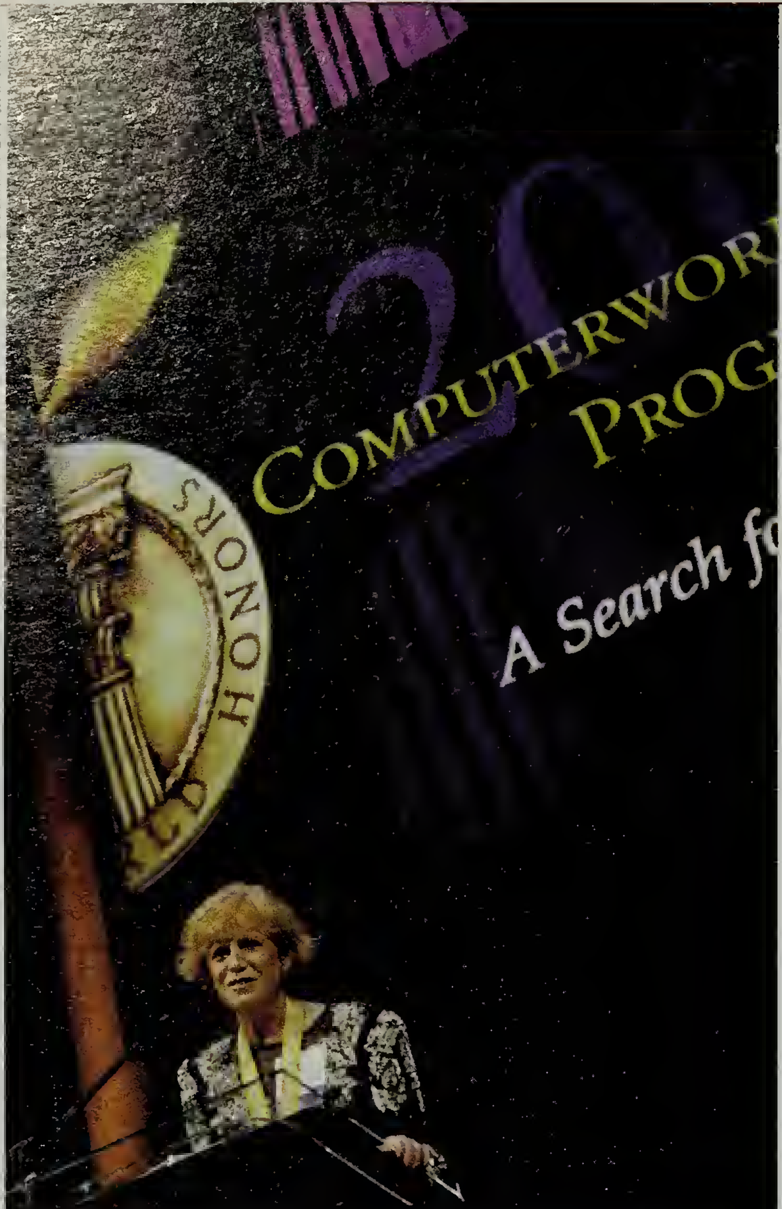


PHOTOGRAPHY BY ASA MATHAT

CONNIE BODEN accepted an award for the Broward County Environmental Protection Department, which developed a paperless inspection process.

IT Achievers Get Recognition, Give Others Ideas

HONORS PROGRAM 2005

Ten organizations win awards for visionary tech projects; Szygenda, Szulik receive individual awards

BY PATRICK THIBODEAU
WASHINGTON

WHEN A GROUP OF IT leaders from Acxiom Corp. approached the stage last week to receive a *Computerworld* Honors award for their grid computing project, among those paying close attention was Clyde Smith, a top IT executive at Turner Broadcasting System Inc.

Smith, whose own efforts to improve the storage and management of digital media at Atlanta-based TBS were also honored at the 2005 awards ceremony here, said he's very interested in grid computing as a potential means of applying more processing power to his newsroom systems.

Taking note of Little Rock, Ark.-based Acxiom's effort to link thousands of two-processor computing nodes into a grid, Smith said with a grin: "We're going to pay a visit."

The *Computerworld* Honors Program recognizes companies, nonprofit organizations and government agencies from around the world for their visionary use of IT to promote social, economic and educational advancements. Their work is detailed in case studies that are archived online and distributed to some 120 museums and libraries for use by scholars, researchers and the general public.

But the IT projects recognized at the awards ceremony are viewed as models of the future, not icons of the past.

For instance, Aidmatrix, which won the achievement award in the Government and Nonprofit Organizations category, used supply chain technology to create an online system that matches corporate donors with charitable groups in an attempt to improve the delivery of food, clothing and other aid items.

Reducing Waste

The Aidmatrix Relief Exchange system allows participants "to see donations being made available" in real time, said Scott McCallum, a former Wisconsin governor who now heads the Dallas-based global relief network. The main goal is to manage donations and inventories of available goods in order to provide aid more efficiently and prevent donated materials from going to waste.

"For a marketplace to work, you need information," McCallum said, adding that the technology used by Aidmatrix "provides the information system to take what would be wasted and match it with those that are in need." He expects the Aidmatrix model to be adopted by others within the relief community.

Smith, who is senior vice president for broadcast engineering at TBS, has been a regular attendee of the Honors Program ceremonies and said he routinely finds technology approaches that are worth emulating. "Every year, I pick up two or three great ideas from these extremely brilliant people who have innovative problem-solving skills," he said.

Canadian Health Care Agency Converges Its Coverage

WASHINGTON

NORTHERN LIGHTS HEALTH REGION is responsible for delivering medical care across an area of more than 71,000 square miles in Alberta, Canada. Geographically, Northern Lights is the province's largest health care jurisdiction. But the area the agency covers in northern Alberta is sparsely populated, with a total of only about 70,000 people.

To help accomplish its mission, Northern Lights is using IBM xSeries servers and networking technology from Cisco Systems Inc. that enables patients and physicians to interact over a converged IP network supporting data, voice and video communications. Northern

> **You can see the patient, you can see the pain, you can see his symptoms. It's the equivalent of being there.**
>
> COLLIN JARDINE, NORTHERN LIGHTS

Honorees

The 10 winners of the 21st Century Achievement Awards for 2005 include the following companies and organizations:

Government and Nonprofit Organizations

Aidmatrix: The Dallas-based not-for-profit organization offers a supply chain system that lets humanitarian aid groups adopt inventory management and distribution techniques previously used almost exclusively by for-profit companies.

Education and Academia

Australian Department of Defence: Australia's Defence Online Campus has developed a highly flexible learning infrastructure built around a common architecture and uniform basic standards.

Media, Arts and Entertainment

Turner Broadcasting System Inc.: A digital media storage and management optimization project at Atlanta-based TBS addresses one of the central issues facing broadcasters and cable networks: the end of the mass viewing market.

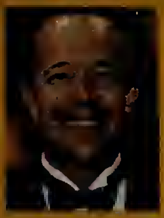
Business and Related Services

Acxiom Corp.: The Little Rock, Ark.-based company's grid computing architecture is designed to meet the increasing information management and time-to-market needs of both Acxiom and its clients.

INDIVIDUAL WINNERS

- **The EMC Information Leadership Award: Ralph Szygenda, CIO and group vice president, General Motors Corp.**

- **The Morgan Stanley Global Commerce Leadership Award: Matthew Szulik, chairman, CEO and president, Red Hat Inc.**



This year's group of honorees included Collin Jardine, manager of computer services at Northern Lights Health Region, which provides medical services to the residents of northern Alberta in Canada. People who see IT as little more than hardware and digits on a screen might have had a hard time maintaining that view after watching Jardine accept an achievement award for Northern Lights.

The agency is using telemedicine systems and a converged IP network to help deliver care to a widely dispersed population "that otherwise might go without," said Jardine, who had to pause several times to keep his composure as he talked about what the technology has meant to Northern Lights (see sidebar below).

Another company honored last week was OnStar Corp., a unit of General Motors Corp. that provides a communications service that motorists can use to seek assistance after an accident or when they encounter other problems.

"We know it's had a meaningful impact already in terms of not only saved lives, but in many thousands of cases [of reduced] injuries," OnStar President Chet Huber said, noting that the system can help speed emergency responses to auto accidents.

The award winners were chosen by an independent panel of judges from among 48 finalists, including nominees from 10 countries. Two individual awards were also presented, including one given to Ralph Szygenda, GM's CIO.

In an interview after the ceremony, which drew about 250 attendees, Szygenda said he thinks IT is becoming more crucial to companies such as GM. For example, he said the automaker is using technology to increase its globalization capabilities and reduce the time it takes to design vehicles (see Q&A, at right).

Acxiom's grid computing work provided further evidence of the constant changes taking place within IT departments. The grid has doubled in size over the past year to a total of 6,000 nodes, and it provides the company with "on-demand business scalability," said Chuck Howland, Acxiom's grid infrastructure group leader.

Howland added that by using a grid, Acxiom can harness the computing capability it needs to run virtually any process. **54951**

Lights is also working to deploy a wireless network to improve the mobility of its health care services, said Collin Jardine, the agency's manager of computer services.

"It's changing the way we do medicine," Jardine said after accepting the achievement award in the Medicine category at last week's *Computerworld* Honors Program awards.

For instance, he noted that the network allows a radiologist who may be hundreds of miles away from a patient to view an X-ray on a monitor in real time. Blood pressure and other vital signs are also available, and the health services supported by the network are being expanded to include real-time viewing of ultrasound images.

"You can see the patient, you can see the pain, you can see his symptoms," Jardine said. "It's the equivalent of being there."

Northern Lights, which is based in Fort McMurray, began developing telemedicine systems in 1999 and started using the converged network last year.

The technical challenges Jardine has faced include network latency and ensuring quality-of-service capabilities for voice and video transmissions. Those problems were resolved primarily by standardizing Northern Lights' networking technology, Jardine said.

Details about the project's cost weren't available.

– Patrick Thibodeau

IT Is Getting More Important Than Ever, Szygenda Says

BY PATRICK THIBODEAU
WASHINGTON

GENERAL MOTORS CORP. CIO Ralph Szygenda spoke with *Computerworld* about IT issues at last week's awards ceremony, where he won an individual award for information leadership. (The interview was conducted before GM said it plans to lay off 25,000 of its manufacturing workers.) Excerpts follow:

What's your take on the arguments raised by Nicholas Carr about whether IT matters? IT matters a lot. There are certain areas of the business, like ERP systems, that will become commodities. I think that's the point he was trying to make. He overstated it, though. In fact, [IT] will be bigger than ever. Having premium products at the lowest price – kind of the Wal-Mart model – that's one [trend] driving the industry. The other one is globalization. Given those two things, companies are going to redo all their processes again, and I guarantee you, at that point, IT is not dead.

How do you ensure that IT is aligned with the business at GM? IT people have to be business people to start with. There is no chance of just being a technologist anymore. In what I call precision information technology, every dollar that you invest in information technology better deliver business results or you are not going to succeed. To do that, you have to understand the business as well.

At General Motors, if you look at all the people who work for me, they are great business leaders and great technologists. In the future, [they're] going to be [the] only survivors, and that's going to be hard for a lot of people because they didn't have both of those capabilities.

Your outsourcing deal with EDS is ending, and you said you're bidding out more than $15 billion worth of IT business over the next five years. What are you looking for from the bidders? They have [to have] the competency to help transform General Motors and to work as a team member with other information technology companies. It isn't lowest price. You've got to realize that information technology is a catalyst for change at General Motors. The whole end goal is to build the greatest cars and trucks, not to build great IT. It's just an enabler. **54939**

READ MORE ONLINE

An extended version of this interview can be found on our Web site: **QuickLink 54890**

Environment, Energy and Agriculture

Broward County Environmental Protection Department: The Florida county replaced a paper-based inspection process with a system that lets its workers automatically schedule inspections and submit reports to a database that's populated in near real time.

Finance, Insurance and Real Estate

Sprint Corp.: Sprint's nationwide, all-digital wireless network and middleware extends insurance claim applications to mobile devices, enabling faster processing of claims.

Science

European Southern Observatory: The ESO's end-to-end data-flow system is designed to improve the transmission and management of astronomical data over transcontinental distances.

Transportation

OnStar Corp.: Detroit-based OnStar's Advanced Automatic Crash Notification system alerts specially trained emergency call center workers to auto accidents and relays crash severity data and metrics.

Medicine

Northern Lights Health Region: The Canadian health care provider is using a converged IP communications infrastructure to deliver better diagnostics and patient treatment and roll out new services while controlling costs.

Manufacturing

Cambium-Forstbetriebe: The German forestry company uses a log-tracking system built around radio frequency identification tags and database software to document all of its labor and transportation processes.

AT DEADLINE

Nortel COO Quits After Tiff With CEO

Gary Daichendt has resigned as president and chief operating officer of Nortel Networks Corp. after a falling out with CEO Bill Owens. Chief Technology Officer Gary Kunis will also leave. Owens said Daichendt made a major contribution to Nortel's business, but "it has become apparent to Gary and me that we have divergent management styles."

Intel Raises Q2 Revenue Forecast

Intel Corp. said revenue for its current fiscal quarter may be slightly higher than expected due in part to a strong demand for laptop computers. The chip maker said that it now expects sales to be as high as $9.3 billion for the second quarter, up from the previously projected ceiling of $9.2 billion. "The real story is that the strength is in mobile," said Chief Financial Officer Andy Bryant.

Supreme Court Rejects Lexmark

Printer vendor Lexmark International Inc. has apparently failed in a legal battle to use the Digital Millennium Copyright Act to stop competitors from making cheaper, refurbished toner cartridges that can be used in its printers. The U.S. Supreme Court rejected Lexmark's claim, just as lower courts had done previously. The court rejected the claim without comment because it was filed late.

BEA Adds Tools to Build, Manage SOAs

BEA Systems Inc. has unveiled a product line designed to provide service infrastructures for enterprises to build and manage service-oriented architectures. The AquaLogic family, which includes rebranded and new tools, will provide messaging, Web services management, registry and security to support SOA implementations.

[ON THE MARK]

HOT TECHNOLOGY TRENDS, NEW PRODUCT NEWS AND INDUSTRY BUZZ BY MARK HALL

MATTHEW FAULKNER

Flash Memory Gets Zapped . . .

. . . in a scheme to lower costs and increase functionality of network-edge devices. That's part of CEO John Kish's vision to revive the fortunes of Wyse Technology Inc. in San Jose. He arrived seven months ago and replaced nine of 12 top executives and shifted the 20-year-old firm from its hardware bias into thinking it's a software company. Oh, sure, Wyse continues to make thin-client machines, but most of its research and development is dedicated to making devices on the edge of the network — handhelds, cell phones and even kiosks — multifunction, on-demand devices. Kish, who holds a doctorate in mathematics, calculates that by combining Wyse's Blazer operating system for thin clients and Rapport, its software management tool, you can deploy low-cost, flash-free devices throughout the enterprise or for consumers. By streaming Rapport over the network to a device, it can load Blazer — which boots a unit in 3 seconds — along with an application after a device is turned on, eliminating the need to load software from wallet-whacking flash memory. Technicians in the field could use a single handheld to collect data and then quickly reload it with another application to do analysis; consumers could use their cell phones for chatting one minute and playing games the next. Kish estimates that by eliminating flash memory, device costs could tumble as much as 40%. Look for flashy flashless devices early next year.

KISH: Flush out flash.

Developers can make do without . . .

. . . Make, the software utility that builds a program from multiple component files. Tracy Ragan, CEO of Catalyst Systems Corp. in Glencoe, Ill., claims that "Make, in general, is antiquated." She says developers should dump their creaky Make tool and adopt Openmake, which on July 15 will be upgraded to Version 6.4. The new release will add a real-time build manager that lets you watch the software build as it happens. If you notice a problem during the process, you can fix the errant source code while Openmake continues to run the rest of the build, and then reload the revised file, which Openmake will handle to complete the process. Ragan says this is a boon to folks engaged in extreme programming.

If Openmake doesn't strike your fancy, Ragan generously points you to her competitors. "We love the competition," she says. Next month, one alternative, the first release of PerfectBuild from Codefast Inc. in San Jose, is due. Like Openmake, PerfectBuild eliminates the need for developers to write scripts to link a program's many files together during a build by generating the scripts automatically, says Jon Gettinger, vice president of marketing. "The more complex a development project becomes, the more you need automation to reduce build failures," he says.

Openmake 6.4 sells for $300 per seat plus $4,000 for server software. PerfectBuild costs $1,000 per seat.

Cookie cutters skew . . .

. . . Web site traffic data. WebTrends Inc., a Web analytics firm in Portland, Ore., pored over 16 months of its customers' Web traffic — more than 5 billion sessions — and concluded that 12% of Web site visitors set their browsers to reject third-party cookies. And some new antispyware tools also eliminate third-party cookies from a browser. The problem for most Web-traffic analytic tools, says Jeff Seacrist, director of product marketing, is that their analytic prowess is largely dependent on cookies that browsers see as being from third parties. Thus, he says, Web traffic data on your site might be inaccurate. Seacrist claims that WebTrends can use its customers' first-party cookies — those that users navigate to — for analytical purposes. This week, WebTrends is upgrading its eponymous analytical tool. Version 7.5 adds quick-query functions to drill deep into data with an easier user interface, Seacrist says. A hosted version for the enterprise starts at $1,000 per month; the licensed software approach starts at $10,000.

28% Web site visitors that Jupiter Research says ax third-party cookies.

Online presentations on the fly . . .

. . . and on-demand and in multimedia is the promise from Clearengine Corp. in Calgary, Alberta. According to CEO Paul Bzeta, low-tech end users, such as sales staff, human resource managers and even CEOs, can easily upload PowerPoint slides, photos and movies and use the phone to call the Clearengine-hosted application to add voice-over commentary that's synchronized to the presentation. Unlike conferencing tools from companies such as WebEx Communications Inc., Clearengine doesn't require a presenter to be "live" during a viewing. End users can see a show anytime by clicking on a URL sent via e-mail. Currently, Clearengine works only with Internet Explorer, says Bzeta. Firefox is on the development schedule, though he declined to give a delivery date. Pricing starts at $899 for an enterprise and is based on the number of minutes of storage. ⓠ 54919

BZETA: Online presentations are a snap.

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United to Scrap Baggage System at Denver Airport

After 10 years, technology still doesn't work right

BY TODD R. WEISS

AFTER MORE THAN a decade of trying to make Denver International Airport's computerized baggage system work as designed, United Air Lines Inc. is giving up on the technology and returning to manual handling procedures.

"It's never worked up to its potential," United spokesman Jeff Green said last week. He added that the airline has spent "enormous amounts of money" on the system over the past 10 years, but it's still used only for luggage heading out of Denver on United and some baggage transfers between flights. The system has never been able to process luggage from arriving flights.

That's a far cry from the promise of the system, which was designed to use about 300 PCs and thousands of remote-controlled carts operating on a 21-mile-long track system. The carts carry luggage from check-in counters to sorting areas and then to planes waiting at airport gates.

However, problems quickly cropped up, delaying the opening of Denver International by 16 months and forcing the airport to install a conventional baggage system as well. United, which is the primary carrier at the airport, took over as the project manager for the automated system in October 1994 in an attempt to resolve the problems.

Green said United has been considering the move away from the computerized system for months. The Chicago-based airline expects to stop using it for outbound bags sometime after Labor Day.

United has been in bankruptcy since late 2002, and one reason for the change is to save $1 million a month in system maintenance costs, according to Green. But more important, the airline expects to drastically reduce its costs for misdirected and damaged bags caused by the computerized system, he said.

Chuck Cannon, a spokesman for Denver International, said the original plan was for the automated system to handle luggage for all the airlines operating at the airport. "It just did not work," he said, adding that the system now is starting to require more maintenance because of its age.

The computerized system has cost the airport about $230 million to design and install, according to Cannon. The conventional baggage system that had to be brought in added another $70 million to the tab, and the delays in opening the airport resulted in interest costs of $340 million.

UNITED estimates it will save $1 million a month in maintenance costs by scrapping the computerized baggage system at Denver International.

NEWSCOM

The system was designed by BAE Automated Systems Inc., a Carrollton, Texas-based company that was acquired by G&T Conveyor Co. in Tavares, Fla., two years ago. A G&T spokesman declined to comment on the matter last week.

Bruce Webster, a Washington-based consultant who counsels companies on troubled IT projects, said United's decision to stop using the system came years too late.

"There are a few lessons that large companies just don't seem to learn," Webster said. "The first lesson is that the best way to build a large, complex system is to evolve it from a small system that works. No one bothered to get a small system up and running in the first place — they went for the big bang." 54960

Microsoft Targets BlackBerry Users With Mobile Updates

BY CAROL SLIWA
ORLANDO

Planned updates to Exchange Server 2003 and Windows Mobile 5.0 that Microsoft Corp. unveiled at its TechEd 2005 conference last week gave some corporate users cause to reconsider their BlackBerry infrastructures.

The updates, due this fall, will let systems administrators treat Windows-based mobile devices just as they would PCs and laptops. Exchange Server will be able to push e-mail, calendars and contact lists to mobile clients without help from middleware, which Microsoft claimed as an advantage over Research In Motion Ltd.'s popular BlackBerry wireless devices.

Built-in functionality to synchronize Exchange with mobile devices caught the attention of Butch Chatham, a principal systems administration analyst at Smithfield Foods Inc. The Smithfield, Va.-based pork processor currently uses RIM's BlackBerry Enterprise Server to deliver e-mail to hundreds of mobile users.

Chatham said he will look into the possibility of getting rid of the BlackBerry technology to help Smithfield reduce costs, benefit from more tightly integrated systems and provide better security through new capabilities that will let administrators remotely "wipe" information from lost or stolen devices.

"BlackBerry has some of these features," Chatham said. "But to be able to bring that onto Exchange Server and not have to manage multiple servers is an opportunity for consolidation."

Rob Enderle, principal analyst at Enderle Group in San Jose, said the updates are "Microsoft's biggest effort to turn its mobile client into a true RIM alternative." He added that in the near term, the odds are slim that many BlackBerry users will switch. But in the longer term, Enderle said, companies will likely weigh their alternatives — especially as they extend mobile capabilities to more employees and as Windows-based handhelds that are "as easy to use as BlackBerry" hit the market.

"We're so invested in BlackBerry, we're not going anywhere," said Don Browning, a solution architect and manager in the development group at a broadcasting company that he declined to name. The company delivers e-mail to at least 1,000 BlackBerry users and just purchased 300 new devices, he said. Describing himself as "a complete addict," Browning added that his BlackBerry is the perfect size, unlike the Windows-based Pocket PC.

Ross McKenzie, director of information systems at Johns Hopkins University's Bloomberg School of Public Heath, said he would like to be able to reset devices or cancel service to lost or stolen handhelds, which Microsoft will support in its updates. But the Baltimore-based institution won't force its 40 BlackBerry users to switch, McKenzie said, adding that he expects to support both BlackBerry and Windows-based devices.

John Starkweather, a senior product manager at Microsoft, acknowledged that most of the company's upcoming capabilities are already available from RIM, Good Technology Inc. and other vendors, which also offer options for connecting to rival mail servers such as Notes. But their approaches are "cost-prohibitive for most businesses," he claimed.
54962

> **"To . . . not have to manage multiple servers is an opportunity for consolidation.**
>
> **BUTCH CHATHAM**, PRINCIPAL SYSTEMS ADMINISTRATION ANALYST, SMITHFIELD FOODS

> **"We're so invested in BlackBerry, we're not going anywhere.**
>
> **DON BROWNING**, SOLUTION ARCHITECT AND MANAGER

MORE NEWS ONLINE

Microsoft's other TechEd announcements included – finally – a ship date for SQL Server 2005, in November:

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BRIEFS

CA Agrees to Buy Niku for $350M

Computer Associates International Inc. has agreed to buy Niku Corp., an IT management and governance software company, for around $350 million. CA in January agreed to resell and support Niku's Clarity IT-MG software, which helps evaluate investments and measure the results of projects. Most of Niku's 290 employees will become part of CA's Business Service Optimization unit.

Citigroup Loses Customer Data

Citigroup Inc. advised customers to take steps to protect their identities following the disappearance of a package containing credit information – names, Social Security numbers and payment histories – on 3.9 million of its CitiFinancial Branch Network customers. The data was stored on computer tapes being sent via United Parcel Service Inc. to a credit bureau.

Oracle to Acquire Database Tools

Oracle Corp. has agreed to buy TimesTen Inc., a maker of software that boosts the performance of database applications that require fast response times, such as stock trading and airline reservations systems. Financial details weren't disclosed. Oracle will use the technology in TimesTen's database and middleware products to improve availability and response times.

Lenovo Unveils Its First Tablet PC

Lenovo Group Ltd. unveiled its first pen-based computer, taking on offerings from Hewlett-Packard Co. and Fujitsu Ltd. The ThinkPad X41 runs Microsoft Corp.'s Tablet PC version of Windows, weighs 3.5 lbs. and is 1.14-in. thick. Microsoft said the X41's debut will help broaden use of tablet PCs among business users.

Apple's Switch to Intel Tests the Mac Faithful

But users say they have no plans to switch — yet

BY TOM KRAZIT

APPLE COMPUTER Inc.'s decision to put Intel Corp. processors in its Macintosh computers provoked a wide range of emotions last week among software developers, industry analysts and its famously opinionated user base.

For the most part, Apple's network of developers appeared willing to give CEO Steve Jobs the benefit of the doubt when it came to the decision to move away from IBM and Freescale Semiconductor Inc.'s PowerPC chips. But analysts say the decision will slow sales as users await the swap.

Apple didn't specify which Intel chips it plans to use beginning in 2006, but an Intel spokesman confirmed that they will be based on the x86 architecture.

Apple demonstrated Mac OS X running on a 3.6-GHz Pentium 4 processor during Jobs' Worldwide Developer Conference keynote speech announcing the planned move.

The switch will require software developers to make new x86-based versions of their products. The level of complexity will depend on whether developers have stayed current with Apple's technology specifications, Jobs said.

Developers didn't openly revolt at the prospect, with many believing that this transition will be much easier than either of Apple's previous tectonic shifts, from Mac OS 9 to Mac OS X and from 680x0 chips to the PowerPC.

The ability to have one CPU architecture across an entire environment was a big selling point for Nick Savvides, a developer at the University of Melbourne's School of Physics in Victoria, Australia. The school uses mostly Linux in its research environment but has been slowly introducing Macintosh systems to replace older Windows machines.

Savvides said he will now be able to replace his Windows PCs with x86-based Macs, which will require some work but allow him to stay within the comfort zone of an instruction set he is already familiar with.

ASSOCIATED PRESS

APPLE CEO Steve Jobs said the move to Intel chips will be an easy transition for many.

Bill Van Etten, a Macintosh user and genetic researcher at the University of Pittsburgh, said he doesn't care "about who makes the CPU inside the machine. Just like I don't care who makes the hard drive, the RAM or the LCD panel."

For Peter Zinsa of the Kentfield School District in California, the move to Intel will hopefully produce lower prices. "I pay extra for Apple's hardware because it's easier to maintain," he said.

Analyst reaction to the deal varied widely.

"While we can see why moving to a dual-architecture approach may bring some benefits, a wholesale move away from the IBM chips would be extremely foolish," wrote Gary Barnett, research director at London-based Ovum Ltd., in a note.

But another analyst, Jack Gold at J. Gold Associates, called it "a stunningly smart move for Apple" in a note.

It's inevitable that some developers will have a painful time making the switch, said Kevin Krewell, editor of "Microprocessor Report."

And the transition could also be painful for Apple.

"I would anticipate that anybody who was thinking about buying an Apple system between now and the end of 2006, they'll probably say, 'Maybe I should wait and see how this x86 stuff shakes out,' " said Nathan Brookwood, principal analyst at Insight 64. **54966**

Tom Krazit is a reporter for the IDG News Service. Computerworld's *Mark Hall contributed to this report.*

NIST Preps Compliance Testing Guidelines

BY JAIKUMAR VIJAYAN

The National Institute of Standards and Technology will soon begin releasing guidelines that federal agencies can use to assess their compliance with a set of mandatory information-security rules due to take effect early next year.

The guidelines will be spelled out in a document that NIST plans to issue in draft form early next month. They are designed to enable periodic testing and evaluation of the effectiveness of the security controls that federal agencies need to put in place, Ron Ross, leader of NIST's Federal Information Security Management Act Implementation Project, said last week.

The new security rules were detailed in Special Publication 800-53, which NIST published in February. The rules cover 17 areas, such as access control, incident response, business continuity and disaster recovery capabilities. They will become a nonwaivable Federal Information Processing Standard for all federal systems except those related to national security.

The draft assessment guidelines being released next month will be included in a companion 800-53A document and will describe testing and evaluation procedures for five of the 17 required controls, Ross said. He added that NIST will finalize the document and provide guidelines for all the rules by year's end.

Goal Is 'Right on Target'

The goal is to help federal agencies assess whether their controls "have been implemented correctly, are operating as intended and are producing the desired outcome with respect to meeting the organization's security requirements," Ross said.

NIST's goal "is right on target," said Alan Paller, director of research at the SANS Institute in Bethesda, Md. Too often, the lack of clear guidelines leads to situations where security mandates are interpreted in multiple ways, Paller noted. "The greatest mistake is when people write what needs to be done but not how it needs to be done," he said.

The effectiveness of 800-53A will depend on the level of detail it provides, Paller said. If the guidelines are crafted by "policy people" with little hands-on experience, they are unlikely to be of much value, he added.

"If a lot of the underpinning details are not addressed, it can give a false sense of compliance," said Will Ozier, president of OPA Inc., a Vacaville, Calif.-based consulting firm. **54963**

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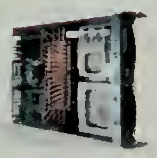

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GLOBAL DISPATCHES An International IT News Digest

London Man Arrested in U.S. Govt. Hacking Case

POLICE IN LONDON arrested an unemployed computer systems administrator last week, more than two and a half years after U.S. authorities said they would request his extradition to answer charges of hacking U.S. federal computer systems.

Gary McKinnon, 39, was arrested at his home in northeast London, according to a spokeswoman for the city's Metropolitan Police Service. He was released on bail last Wednesday after a court hearing on extradition.

Although McKinnon was indicted in a U.S. District Court in Virginia in November 2002, London police received the extradition warrant only recently, the spokeswoman said. The warrant alleges that McKinnon gained illegal access and made unauthorized modifications to dozens of computers belonging to NASA and the U.S. Army, Navy, Air Force and Department of Defense between Feb. 1, 2001, and March 19, 2002, she said.

McKinnon allegedly obtained administrator privileges on a number of government computers and then used that access to delete user accounts and install software enabling him to remotely control the systems, according to his indictment.

■ PETER SAYER, IDG NEWS SERVICE

GLOBAL FACT

$17.2B

India's total IT services and business process outsourcing revenue in the fiscal year that ended March 31.

SOURCE: NATIONAL ASSOCIATION OF SOFTWARE AND SERVICE COMPANIES, NEW DELHI

Germany Sets Nov. Start For Biometric Passports

DÜSSELDORF, GERMANY

GERMANY PLANS to be among the first countries in Europe to issue biometric passports, starting Nov. 1, the Interior Ministry announced earlier this month.

The new passports, valid for 10 years, will include an embedded radio frequency identification (RFID) chip that will initially store a digital photo of the passport holder's face. Beginning in March 2007, prints of the holder's index fingers will also be stored on the chip.

Germany's biometric passports are based on specifications approved in May by the International Civil Aviation Organization, which has its headquarters in Montreal. The RFID chip can be read only by certified reading devices, and only when the passport is open, officials said.

The U.S. government has set an Oct. 26 deadline for European Union countries to issue biometric passports, but the EU is negotiating for an extension [QuickLink 53624].

■ JOHN BLAU, IDG NEWS SERVICE

Wi-Fi Network Goes Into Australian Bush

SYDNEY

ONE OF THE LARGEST rural wireless networks in Australia was officially launched last week at The University of Queensland's Gatton campus. The UQconnect wireless network is designed to provide round-the-clock Internet access to make it possible for teachers and students to move beyond the traditional classroom and do outside research.

The university, located 100 kilometers from Brisbane, has invested more than 50,000 Australian dollars ($37,800 U.S.) to develop the Wi-Fi network, which has 20 access points, said Nick Tate, the school's director of IT services.

"This link between the outside environment and the lab will speed up data collection and dissemination, meaning research output will improve significantly," Tate said. **54932**

■ COMPUTERWORLD TODAY (AUSTRALIA)

Compiled by Mitch Betts.

Briefly Noted

Kinpo Electronics Inc., a Taipei, Taiwan-based maker of electronic calculators, has deployed a converged voice, data and multimedia IP network for its 10,000 employees, Nortel Networks Corp. announced last week. The network, based on Nortel switches and routers, connects facilities in Taiwan, China and Thailand.

European Aeronautic Defence and Space Co. last week said it has formed an alliance with Research In Motion Ltd. to market BlackBerry devices to government agencies across Europe. Amsterdam-based EADS and Waterloo, Ontario-based RIM announced that they will attempt to get the devices certified for government use, starting with a security certification that's required by the French government.

Dexit Inc., a Toronto-based electronic payments service, this month named David Lloyd CIO. Lloyd holds an MBA from Queen's University in Kingston, Ontario, and was previously senior director of technology services at Carlson Marketing Group, a unit of Carlson Companies Inc. in Minneapolis.

Unisys Extends Extra CPUs To Data Center Servers

BY PATRICK THIBODEAU

Unisys Corp. last week added a processing capacity-on-demand capability to its enterprise-class ES7000 servers, giving the Intel-based systems a feature that's already available on its mainframes and on machines offered by some rival hardware vendors.

George Gray, an executive staff analyst at the Georgia Technology Authority in Atlanta, said the state IT agency uses the existing capacity-on-demand offering on two Unisys OS 2200 mainframes. For instance, a system that supports law enforcement activities contains eight processors, but only two of them are running, Gray said.

Now the IT agency is moving more toward Windows systems and plans to purchase ES7000 machines, potentially in capacity-on-demand mode. "We're very familiar with the concept," Gray said. "That's why it has a great deal of surface attractiveness."

Blue Bell, Pa.-based Unisys announced a series of ES7000 Real-Time Capacity (RTC) models that include four inactive Intel Corp. processors along with four, eight or 12 active ones. Unisys will charge a 10% premium upfront for the extra CPUs. But if a user eventually turns them on, the final cost will be no different than if they were initially purchased as active processors, said Mark Feverston, director of platforms for systems and technology at Unisys.

Four ES7000 users said the capacity-on-demand feature makes financial sense only if processing demand is set to increase in the future.

Denis Baker, CIO at Sarasota Memorial Hospital in Florida, said he doesn't need to have extra processing power on hand for the 24- and 12-processor ES7000 systems he runs. "It's not like we're hosting Web sites and have unknown demand that's going to hit," Baker said. "Our user load is more static than that."

But there are other issues to consider when deciding whether to buy processors as needed or go with the RTC model, some of the users said.

Carolyn Lightfoot, CIO at Lee College in Baytown, Texas, has two ES7000 servers that she expects to grow over time. Lightfoot said she may consider RTC on future purchases because of the potential advantage of getting approval for present and future expenditures at one time and avoiding later budget battles.

TECHNOLOGY DETAILS

ES7000 RTC

- **Includes Xeon MP or Itanium 2 processors and runs Windows and Linux.**
- **Costs 10% more than regular models, but the premium is subtracted when inactive CPUs are turned on.**
- **Will let users temporarily activate processors up to four times for "a nominal fee," starting later this year.**

St. Paul, Minn.-based Technology Information Education Services (TIES), a nonprofit consortium that provides IT services to Minnesota schools, runs four ES7000 systems, including three with 32 Xeon processors each. Helmut Porcher, director of operations and system software at TIES, said he's inclined to buy additional processors as needed.

But a downside to that is the short duration of processor life cycles, Porcher noted. He said that if users were to wait eight to 12 months to add more processors, "you might not be able to buy additional processors that match what's already inside your server." That could be a problem for users who don't want to partition their ES7000s, he said. **54961**

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Larry Ellison Launches Storage Start-up, Array

Pillar unveiled after four years, $150M investment; competes with big vendors

BY LUCAS MEARIAN

AFTER INVESTING four years and $150 million, Oracle Corp. CEO Larry Ellison has launched a new company that offers a storage array that targets products from storage heavyweights such as IBM, EMC Corp. and Hewlett-Packard Co.

Pillar Data Systems Inc. in San Jose unveiled its first product, called Pillar Axiom, which offers storage-area network (SAN) and network-attached storage (NAS) capabilities under a single management interface.

The product also features multiple quality-of-service levels. The array is currently based on Advanced Technology Attached disk drives and will offer higher-performance Fibre Channel drives by the end of the year.

While wary of Pillar's status as a start-up in an already saturated market, some users said the backing of Ellison and his investment firm, Tako Ventures LLC, helped convince them to kick the tires on the technology.

"This start-up is well funded enough in comparison to others," said Christopher Hill, associate director of information services at Thacher Proffitt & Wood LLP, a New York-based law firm that specializes in financial services. "They have some built-in buyers who will give us a community, one of which is obviously Oracle."

PILLAR's new Axiom array offers SAN and NAS capabilities.

Pillar CEO Mike Workman, a former IBM storage executive, said the company set out to build a storage system based on commodity storage hardware that doesn't target only a single application, such as transaction data storage file serving.

Thacher Proffitt & Wood replaced an outdated EMC Clariion 4700 in its New Jersey office with a Pillar Axiom about a month ago, Hill said. Since then, he has used the new box in its SAN configuration as the remote backup to an EMC Clariion CX600 array in the firm's New York office.

High Marks

Hill gave Pillar's array high marks on price, ease of use and functionality. He estimated that an EMC system similar to his $100,000 Pillar box would cost around $400,000.

Proprietary software allows the Axiom to create multiple service levels through its placement of data on its disk drives.

The outer edge of the drives, closest to the read/write head, is reserved for higher-performance applications, while the center and inner edge are used for lower-performance needs, Workman explained.

"If that method can be proven [to] help performance, that'll be really cool," said Tony Asaro, an analyst at Enterprise Strategy Group Inc. in Milford, Mass.

Other analysts, however, said they wonder why Ellison invested so much time and money in Pillar.

For instance, John Webster, a storage analyst at Data Mobility Group in Nashua, N.H., questioned Ellison's motives for his attempt to break into a business that is undergoing consolidation among even mature players.

One example of that consolidation trend, said Webster, is Sun Microsystems Inc.'s recent acquisition of onetime industry leader Storage Technology Corp. [QuickLink 54817].

"He just wants to be a disruptor for whatever reason. I don't know if he has it in for the people already there or he sees this as a strategic place he needs to be," Webster said.

Chris Butler, chief technology officer at San Francisco-based I/Pro Corp., has been testing an Axiom array in its NAS configuration since early December.

> **[Ellison] just wants to be a disruptor for whatever reason. I don't know if he has it in for the people already there or he sees this as a strategic place he needs to be.**
>
> **JOHN WEBSTER**, STORAGE ANALYST, DATA MOBILITY GROUP

"I wouldn't call it excellent yet, but it's good," he said.

After his EMC Symmetrix array failed three years ago, requiring a major system shutdown to restore data, Butler said he became willing to take a chance on new technology.

"The throughput on the head is as good as I'm seeing with my [NetApp 880 NAS array]," he said. **54937**

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Continued from page 1

Sarb-Ox

Antonellis said.

Last month, the SEC and the PCAOB, a regulatory body set up to oversee auditors of public companies after Sarbanes-Oxley was approved in 2002, began easing the compliance burden by issuing guidance aimed at limiting the number of IT controls that companies have to document [QuickLink 54486].

Meanwhile, President Bush earlier this month nominated Rep. Christopher Cox (R-Calif.), who is viewed as a pro-business legislator, to succeed William Donaldson as chairman of the SEC. Some observers expect that move to lead to additional reforms that ease compliance with the law.

But any future revisions to Sarbanes-Oxley that may transpire will likely be too little, too late for many IT managers forced to undertake massive documentation projects over the past 18 months.

Documenting IT controls "is almost like copying words out of a dictionary as a punishment," noted John Hagerty, an analyst at AMR Research Inc. in Boston.

But once companies have documented those controls, it shouldn't take nearly as much effort in future years if they have automated those processes and made them repeatable, Hagerty said.

Still, further reforms would be helpful, executives said. For example, the PCAOB should address some of the inconsistencies with its Auditing Standard No. 2, said Colleen Cunningham, president and CEO of Financial Executives International, an association of U.S. and Canadian executives based in Florham Park, N.J.

Under that PCAOB standard, it's assumed that if documentation for a company's internal control doesn't exist, then the control itself doesn't exist, said Cunningham. "I think that's where a lot of the cost came from, particularly with a lot of smaller companies, where the controls are informal but may not be documented and would otherwise be considered a deficiency," she said.

ANTONELLIS: State Street conducted extensive testing "to validate what we already knew."

Other IT executives said that the IT controls requirements have helped improve the integrity of their operations, but they agreed that the Act's documentation demands can be excessive.

"While I have yet to see any compliance requirements that are not good, the nature of the compliance overall tends to lead to an increased level of bureaucracy," said Tony Fuller, vice president of IT and CIO at Rent-A-Center Inc. in Plano, Texas.

"This has become the greatest challenge, because it easily creates a tendency to staff [the IT organization] according to who can follow the process the best, not necessarily who is best able to improve upon the process, very easily shutting out individuals that are entrepreneurial," Fuller said.

Yuri Aguiar, chief technology officer at Ogilvy & Mather Worldwide in New York, said he would like to see the SEC and PCAOB come up with more prescriptive compliance requirements.

That's because the current policies are left open to interpretation, leaving corporate officers at risk of either underestimating the requirements and doing too little to comply, or overestimating the requirements and doing too much, Aguiar said. **54952**

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DON TENNANT

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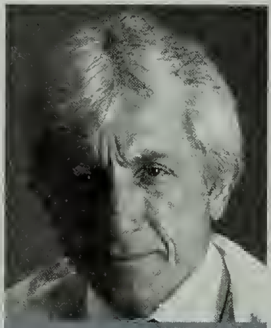

DON TENNANT is editor in chief of *Computerworld*. You can contact him at don_tennant@computerworld.com.

If I hadn't already felt that way, attending the *Computerworld* Honors event in Washington last week would have won me over. Read about the people and pursuits that were honored this year in our special report beginning on page 4, and you'll understand what I'm talking about. Your colleagues have set the bar high.

It's because I have an equally high regard for the IT profession that I was bothered by a study we covered last week on the salaries being paid to IT professionals with technical skills [QuickLink 54903]. According to the Foote Partners study of 48,000 IT workers in the U.S. and Europe, compensation for those who lack technical certifications increased by 2.8% in the first quarter of 2005, while pay for workers with certifications increased by only 0.6%. And for the full year that ended April 1, workers without certifications enjoyed an average pay increase of 3.6%, while those with technical certifications saw an increase of 2.9%.

If you found yourself reading that paragraph twice because it seemed sort of backward, you got it right the first time. So, what on earth would account for the counterintuitive results? Why would noncertified workers fare better than certified workers? Foote Partners President David Foote chalks the findings up to what "could be the beginning of a trend" — a greater appreciation for skills demonstrated through real-world experience than for the certifications themselves. "It might be the reversal of the past when you had to have certifications to prove you had the skills," Foote says.

Granted, it's only one study, and the suggestion that it heralds a trend is a bit of a stretch. But it does legitimately raise a red flag. Any hint that companies are de-emphasizing the technical certification process is troubling, because it could so easily have a negative effect on professional standards. I'm as big a believer as anyone in the importance of on-the-job training and real-world experience, but that doesn't begin to obviate the need for a formal certification program.

In a world where risk management and business continuity planning are essential pursuits for any healthy IT organization, every asset needs to be defined and monitored, and that includes technical skills. There's no better way to accomplish that than through a consistent, well-conceived means of documenting who has what skills. And that means certification.

The IT profession's culture of requiring the certification of skills acquisition has always been an advantage. Other entities — the U.S. armed forces come to mind — share that advantage.

There's an associated demand for excellence that's well worth emulating, which is why I'd be all for having formal skills certifications in journalism. Since we in this career field really have no formal certification or licensing mechanism, anyone can call himself a journalist — and let's face it, the shoddiness that situation enables often shows. I'd even make certifications revocable. Taint the profession by making up sources, for example, and kiss your certification goodbye.

So if you perceive even a subtle cultural shift away from certification in your organization, do something about it. In the process, you'll be keeping the bar up high where it belongs. 54921

Don Tennant

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MICHAEL H. HUGOS

IT and Its Reputation at A Crossroads

THE IT profession is at a turning point. One sizable group of IT practitioners already knows what needs to be done. Another continues to apply the same old ways of doing things that result in the same old horrendously expensive systems that often don't work. What differentiates one group from the other? The manner in which they perceive and respond to complexity.

People not skilled in the use of effective techniques for dealing with complexity usually fall back on the use of clumsy, slow-moving, bureaucratic ways of doing things. In most situations, these approaches aren't up to the challenge. They fail, and the reputation of the IT profession is tarnished each time that happens.

A good example of this is the recent collapse of a multiyear, multimillion-dollar project to upgrade application systems used by the Internal Revenue Service. People on this project looked at the complexity involved and were totally overwhelmed. They responded by adopting cumbersome procedures that tried to handle everything. Analysts analyzed and programmers programmed as documents piled up and the years went by. Nothing useful got done.

MICHAEL H. HUGOS is CIO at Network Services Co., a distribution cooperative in Mount Prospect, Ill., that sells food-service and janitorial supplies. He is the author of *Building the Real-Time Enterprise: An Executive Briefing* (John Wiley & Sons Inc., 2004). He can be reached at mhugos@nsconline.com.

Another approach would be to respond to complexity by making rigorous use of the six core techniques I outlined in a previous column [QuickLink 53699]. You can use these techniques to reduce complexity into manageable, self-contained pieces. You can make progress right away on the simpler pieces and build solutions to the more complex pieces over time.

One reader who belongs in that group of IT practitioners who know what needs to be done sent me a wonderful way to solve the problem. It's elegant in how it uses just a handful of techniques to address complexity. "Process each account in its own thread — not whole files; it greatly reduces complexity and latency and increases scalability," he wrote. "Use pipe-and-filter with no intervening files instead of file-process, file-process, etc. This architecture was described by Mary Shaw at Carnegie Mellon years ago.

"Design and write a separate thread for each business case, beginning with the most common or simplest, e.g., domestic exempt salaried employee," he continued. "The IRS could have been processing all simple 1040 returns in a matter of months on the new system instead of taking years trying to develop monolithic, all-case, highly complex systems. In my scenario, there might be 30 or more separately designed and written processes handling business case threads."

Go to Google, type in "pipe-and-filter," and read some of the references that come up. It's a great approach. It uses combinations of four core techniques: joint application design, process mapping, object-oriented design and programming, and system prototyping. Any IT practitioner skilled in these techniques will quickly grasp the main concepts of this approach and be able to put them to good use. And there are plenty of other such approaches that also use combinations of the core techniques to effectively deal with complexity.

So, which way will IT go as a profession? Every successful profession must develop a set of core techniques that enable its practitioners to succeed in their endeavors most of the time. We can allow ourselves to be intimidated by complexity and cling to ineffectual, bureaucratic approaches that give us a reputation as a bunch of not-so-lovable screw-ups. Or we can rise to the challenge and become practitioners of a profession respected for its ability to apply technology effectively in complex situations. 54800

DAN GILLMOR

Law and the Spyware Plague

AFTER A U.S. Senate hearing earlier this month, one senator was quoted as likening spyware to "somebody walking around your house, kind of invisibly." The analogy was inadequate.

DAN GILLMOR, a writer based in Silicon Valley, is the author of *We the Media: Grassroots Journalism by the People*, (O'Reilly Media Inc., 2004). Contact him at **grassroots@gillmor.com.**

Spyware is more like someone planting hidden cameras and microphones around your house and office, and even in the bathrooms. It's just about the sleaziest online activity there is.

Given the severity of the problem, one might be pleased to hear that Congress seems fairly serious this year about doing something about it. But it's too soon to get our hopes up. For a variety of reasons, including the sheer indifference of the bad guys to the rule of law, this plague will be enormously difficult to slow, much less halt.

The stakes are high and growing. Nothing less than the future of online commerce and communications may ride on whether we find ways to deal with spyware.

One of the big problems is with definitions. Is "adware" — software that pollutes your computer with unwanted advertising — spyware? I think it can be, certainly when users don't realize that clicking "yes" on a terms-of-service box for a product will lead to the installation of adware. This is all too common.

The adware industry is making some moves toward real legitimacy. But as long as such software continues to find its way onto people's computers without genuine, knowledgeable consent, the adware industry won't have my respect. (I urge you to visit Harvard law student Benjamin Edelman's excellent site at *www.benedelman.org* if you are interested in the machinations of the adware companies.)

We can all agree that some kinds of malware are just plain bad. In this category, I'd include keystroke recorders and other surveillance tools that capture what we type and send it elsewhere. (I should note that companies put such things on employees' computers all the time. As long as they tell the employees they're doing it, they have the right, even if the practice is a bit nasty.)

The main problem with the proposed laws is the fact that the U.S. isn't an island on the Internet. The global nature of networks means we have to deal with international criminals.

"The guys out of Russia or wherever, they're untouchable," notes Richard Smith, a computer security expert. But having some new tools to fight domestic bad guys — such as class-action lawsuits — is better than nothing, he says.

In theory, current law already provides for prosecution and punishment of the worst offenders. Also in theory, software tools could solve the problem.

IT people need to explain to marketing people that it is never acceptable to install unwanted software on customers' computers. And marketing people need to understand what they risk if they go ahead and do it.

What they risk with me is simple: If I learn that a company has even attempted to pull a fast one, I put it on my personal blacklist, which means never doing business with it again.

I also never do e-commerce on a computer I don't own. And, given Windows' history as the vehicle for the worst spyware, I use a Mac.

I wish Congress the best in its efforts to help end the spyware plague. I suspect, however, that in the end, the law will be just one relatively minor tool. 54869

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www.computerworld.com/columns

READERS' LETTERS

No 'O' in Quality

I'M AN EXPERIENCED American software developer whose company is on the verge of embarking on a collaborative outsourcing experiment. I had to chuckle at the management consultant in the story "Outsourcing: The 'O' Word Reconsidered" [QuickLink 54064] who asks, "What is our cost per line of code versus the best in the world?" The real question to ask is, "How good is our code, and how do we know?" What if your outsourced team churns out thousands of poorly designed, inefficient lines of code at half price, but over the life of that code you end up paying many times the original development cost due to increased maintenance and decreased flexibility/extensibility? Did you really get that great of a deal in the long run? IT management and management consultants need to realize that quantifiable quality is the way to achieve long-term low costs, regardless of who does the work, how fast they do it or how much you pay them.

Chad Woolley
Software developer,
Tucson, Ariz.

ALTHOUGH THE WORD *outsourcing* was in the headline, the story was about offshoring. A pet peeve of mine is the way the IT profession uses one term to mean another. When did the word *outsourcing* become co-opted by *offshoring*? However, whether "out" or "off," the concepts are onerous for most IT folks. IT management can try to put a positive spin on these concepts, but for the majority of people in this profession, it is bad news. What is most disturbing for both of these trends is that the benefits are usually overstated and costs understated. If the history of offshoring is anything like outsourcing's, businesses will be rethinking their decisions within about five years. Maybe IT management needs to go back to school to reskill themselves on preparing realistic business cases for either outsourcing or offshoring.

Bob Zimmerman
IS project manager,
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rzimmerman@ci.antioch.ca.us

The Lost Generation

IT'S A FALSE ASSUMPTION that managers have time for proper succession planning, but it can also be argued that no manager is eager to train his own replacement ["Grooming the Next Generation," QuickLink 54219]. Will older, more experienced managers believe there is a possibility that they could be laid off once their replacements have been trained? Possibly. Would that opinion affect succession planning efforts and timetables? Definitely.

Another argument could be that the next generation of IT leaders is being effectively killed off by reckless outsourcing. Responsible outsourcing or offshoring has shown itself to be a highly productive method for application development, but reckless outsourcing and offshoring of IT functions resulting in thousands of IT professionals being laid off causes tomorrow's potential IT leaders (who are still in school today) to see other career possibilities as more attractive than IT.

Harold Carruthers
St. Peters, Mo.

COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to Jamie Eckle, letters editor, Computerworld, PO Box 9171, 1 Speen Street, Framingham, Mass. 01701. Fax: (508) 879-4843. E-mail: letters@computerworld.com. Include an address and phone number for immediate verification.

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TECHNOLOGY

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Q&A

Beyond Paper

Hervé Gallaire, president of the Xerox Innovation Group, discusses real-world applications of research and development and how his company exploits innovation. **Page 30**

SECURITY MANAGER'S JOURNAL

Lull in Action Is Time to Tie Up Loose Ends

The blackout at the end of the quarter is a chance for Mathias Thurman to do some documentation, evaluate new technologies and consider the impact his company's growth is having on his staff. **Page 28**

QUOTE OF THE WEEK

> **"The advance of analytic technology is hindered by a collective software industry blind spot: There is no clear, convincing vision of the future of analytic application-development tools."**
>
> **Curt Monash, page 32**

Anticipation GAME

Text mining and real-time applications have improved the accuracy and timeliness of predictive analytics, making it a better bet for businesses.

By Robert L. Mitchell

RICHARD BORGE

IN THE MOVIE *Minority Report*, Tom Cruise's character relies on visions from "precogs," people who can predict crimes, to catch criminals before they can act. While the film takes place in the future, the predictive analytics tool sets available to businesses today are bringing similar scenarios to life.

For example, LoanPerformance uses such tools to help its clients predict which of their customers will be late with payments, which will be lying when they

Continued on page 24

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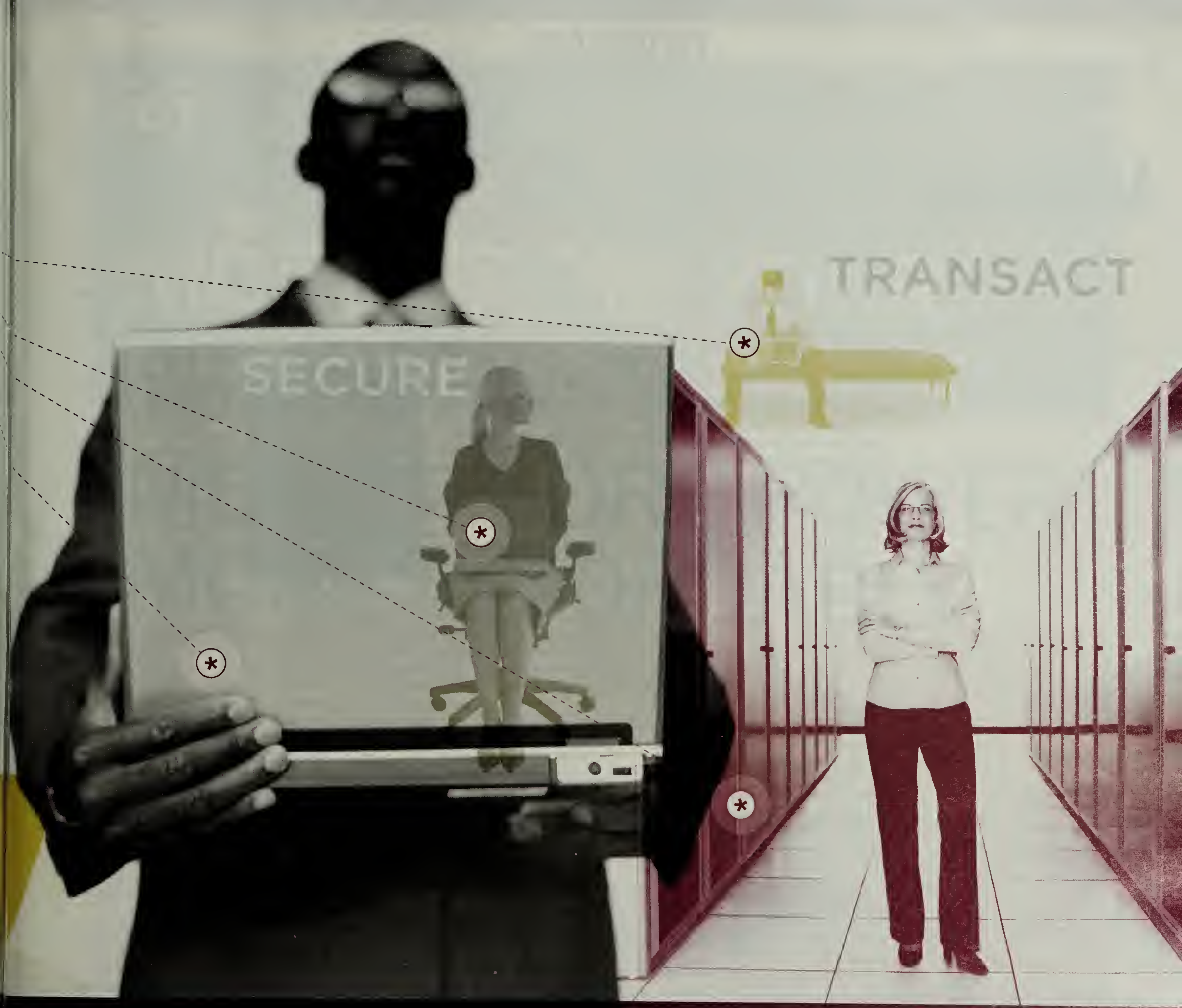

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Anticipation GAME

Continued from page 21

say the check is in the mail and which will be likely to default altogether. The San Francisco-based firm operates a cooperative database of loan payment information for financial institutions. Richard Harmon, senior vice president of scoring and analytic services at LoanPerformance, says its customers, which include mortgage servicers, use the data to encourage on-time payments or to put delinquent accounts on the fast track to foreclosure.

Predictive analytic tools are also used to predict outright fraud. For example, at health insurer Highmark Inc. in Pittsburgh, such systems are set to anticipate and block fraudulent claims.

The adoption of predictive analytics systems is on an upswing, driven by technology advances and the potential for large bottom-line benefits. The number of preconfigured and proven models available for specific industries and applications is increasing, while the model-creation process is more automated than it once was. That means analysts can build models faster — and refresh them more frequently in response to changing business needs.

Successful models can pay off big. At LoanPerformance, a model that predicts which accounts that are 90 days in arrears will default saved one client $2 million in six months. The total cost of deployment was $400,000. Those types of returns are one reason why IDC research shows the sale of predictive analytics tools growing to $3 billion by 2008, which would be a nearly 40% increase from 2004. Such tools make up 25% of the business intelligence market.

As the volumes of business data have increased, the desire to extract value from that information has intensified. Fortunately, predictive analytics tools have become easier to use, says Harmon, allowing more streamlined model-building workflows and enabling analysts steeped in business issues to do more without the involvement of statisticians. "This is where the future lies," he says. "The tools are being automated."

The biggest benefits, however, are coming on two fronts: the inclusion of unstructured data into the predictive modeling process to improve accuracy and a push to execute predictive analytics and present results in real time.

Predictive analytics involve several steps, ranging from identifying and preparing target data to developing a statistical model, testing it on a sample for accuracy and then running it against the full data set. Results are sent to front-office systems, where business logic is used to, for example, cross-sell a customer a different product or flag an insurance claim as potentially fraudulent. While most organizations customize predictive models to their customer bases and business challenges, many processes for finding models have been automated.

More challenging are efforts to achieve real-time results. They fall into three categories: enabling real-time scoring on the front end when, say, a new loan application comes in; updating the back-end databases; and accelerating the pace at which models can be refreshed to deal with changing scenarios, which can be helpful because criminals are constantly devising new ways to commit fraud, for example.

Texting It Up

Harmon says he was surprised at how much text mining increased the accuracy of his predictive models. The previous model included structured information such as loan histories, credit reports and demographics. He added textual notes entered by call center staffers as they spoke with customers.

"That information tends to be very, very rich, despite the fact that it tends to be very noisy," Harmon says. He used tools from Intelligent Results Inc. in Bellevue, Wash., to analyze linguistic data and identify when someone may be lying. For example, if someone says, "The check is in the mail," that might be one indicator. "What we're looking for is not just the words, but the patterns that lead to an event," says Harmon.

"The text-alone models worked better than our standard models," he says. When Harmon mixed the text with structured data, accuracy improved by 18% over his original model.

AT A GLANCE

PREDICTIVE ANALYTICS SOFTWARE

- Sales in 2004: **$2.2B**
- Share of total core analytics market: **25%**
- Projected growth rate through 2008: **8%***

*Compound annual growth 2003-2008

SOURCE: IDC, JANUARY 2004

J.D. Power and Associates is in the early phases of testing text mining. The Westlake Village, Calif.-based customer research firm wants to use verbatim comments from surveys to create an early warning system that predicts warranty problems for automobile manufacturers.

J.D. Power is currently experimenting with a tool from ClearForest Corp. in Waltham, Mass. Preliminary testing has shown that written responses are more useful in predicting the nature of a given problem than are structured, check-box answers, says Joe Ivers, executive director of quality and customer satisfaction research.

While written comments are provided to J.D. Power's customers, the volume of surveys makes it hard for the automakers to identify unforeseen problems with vehicles. The manufacturers want to catch such problems before large volumes of new vehicles have shipped. "By the time something appears frequently enough to appear to the unaided eye, it's too late," Ivers says.

Nextel Communications Inc. in Reston, Va., uses Enterprise Miner from SAS Institute Inc. in Cary, N.C., to make predictions based on text captured in call center dialogues.

Scott Radcliffe, director of decision sciences, says the telecommunications company relates "key phrases that occur during customer interactions" with future customer churn. It has been able to reach out to those customers before they actually leave — a

Continued on page 26

Avoiding the 'Duh' Factor

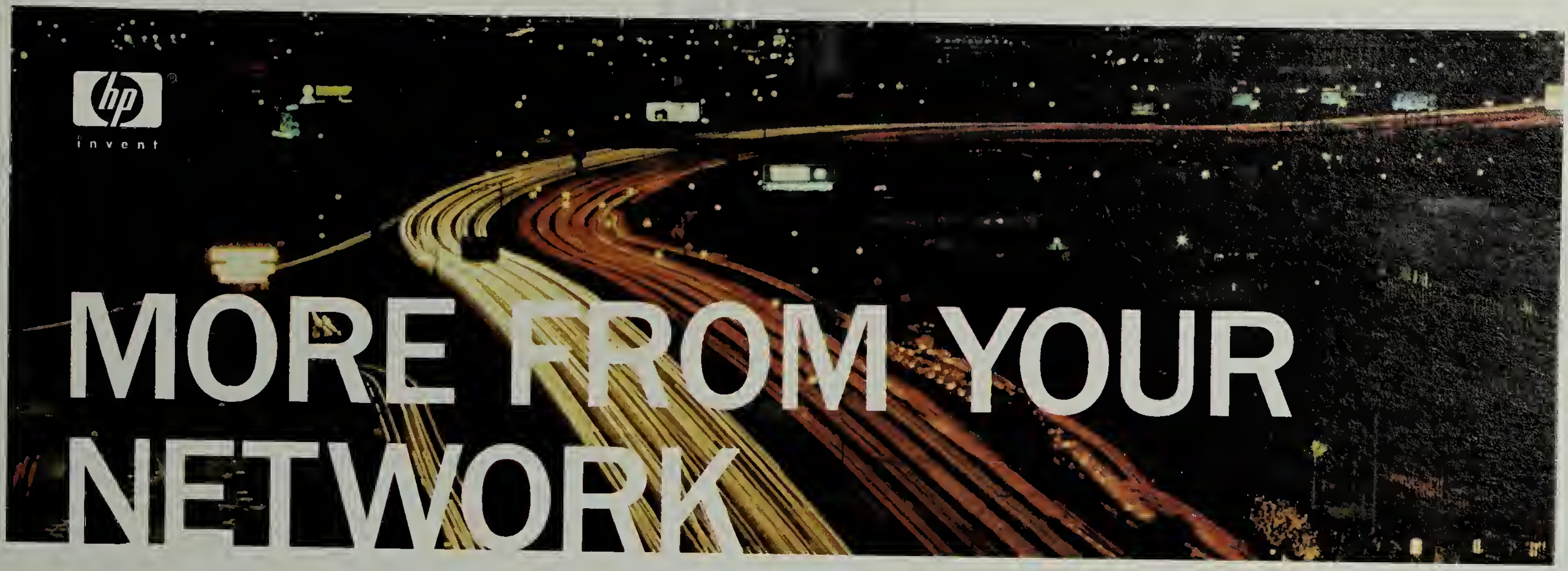
One pitfall with predictive analytics is that it may end up predicting the obvious, users say. "You can often demonstrate that the software is irrelevant. I don't need a statistician to tell me that someone who buys a hammer will also buy a nail," says Lou Agosta, an independent technology analyst in Chicago.

Avoiding such embarrassments requires a review of input variables by those who understand the business, says Richard Harmon, a senior vice president at LoanPerformance. The company developed an application that predicts the likelihood of loan defaults for borrowers who are 90 days past due on a payment. "You could put silly stuff in any model, like why a certain type of house shingle could lead to a [home mortgage] default," he says.

"You can hire intelligent people who are modelers, but if they don't have domain knowledge, that's where you usually get into trouble." Harmon says. "The person needs to have the domain knowledge of what you are building."

Sometimes, however, results initially dismissed as spurious end up being important. At health insurer Highmark a few years ago, an analysis indicating that cataracts were an indicator of future heart attacks was discounted, says Christopher Scheib, manager of decision support. But in the past year, medical researchers have discovered that heart disease affects the oxygenation of the blood and that the presence of cataracts is a reflection of that condition. "It is indeed a predictor of heart disease," Scheib says. Highmark now offers services to prevent heart attacks among people with that condition.

– Robert L. Mitchell



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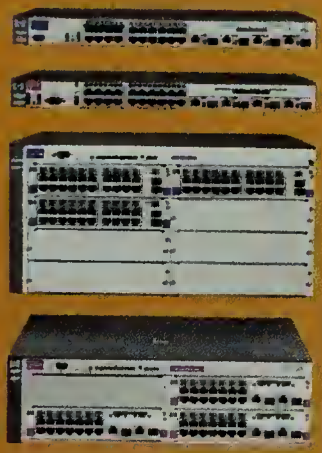

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Anticipation GAME

Continued from page 24

big concern in the highly competitive telecommunications market.

For I4 Commerce Inc., which must approve or deny an online transaction request in under four seconds, real-time analytics is the name of the game. Merchants use the company's "Bill Me Later" service to offer credit to a merchant's customers without the need to present credit card information over the phone or the Internet. Tom Keithly, vice president of credit and integration at I4, says his staff used a predictive analytics workbench from Toronto-based Angoss Software Corp. to develop a model that can score each request to identify fraudulent transactions.

"Our credit decision occurs in real time, and each database we go to is maintained in real time," Keithly says. Inputs include credit reports, demographics, telephone number verification and the vendor's own internal customer histories. As soon as a customer completes a transaction, the system updates that customer's risk score. To do that, Timonium, Md.-based I4 pulls data from its live Oracle database rather than using its data warehouse. "We only use the data warehouse to develop new versions of the [model]," he says.

Although he could use tools like SPSS Inc.'s Clementine scoring engine to download data and deliver the resulting scores, Keithly says that approach would have introduced too much latency for the response time he required. Instead, he took the algorithms built by the modeling system, compiled them in Java and runs them on I4's production servers. "It's just pure math. It operates as logic in the production system," he says.

Real Deal

A critical difference in using predictive analytics is the speed at which models can be refreshed, Keithly says. While the mainframe systems he used years ago only allowed model development every two years, his current tool set allows him to refresh the model every 90 days. But that's still not real time. For most applications, the ability to refresh the model every quarter is adequate, says Keithly. However, he sees areas in which real-time models would be useful, such as fraud, where assumptions must be changed in response to changing perpetrator tactics. Keithly expects to see real-time modeling in the next decade. "It will be worth it as long as it doesn't take a massive investment to make it work," he says.

But a massive investment is often required for organizations to provide real-time access to data. I4 is relatively small and built its IT systems from the ground up in 2001 using state-of-the-art technology, including Solaris servers and Oracle databases. For large companies with older equipment and databases, that's more of a challenge.

"If data is divergent across multiple sources and you need to bring a data warehouse together, that's considerably more money," says Christopher Scheib, manager of decision support at Highmark.

Peter Heijt, vice president of marketing and sales at Fortis Banque SA/NV in Utrecht, Netherlands, wants to provide real-time access to data for predictive analytics applications that will improve the success rate of sales campaigns. "The investment is more or less double the cost of the data structure we have now in data warehouse, data mart and CRM. So the payoff has to be big. We're looking for a 40% increase in sales effectiveness," he says. Heijt is experimenting with a small part of his CRM database to see if the investment is justified.

Scheib says he needs access to outside data in real time to facilitate decisions on how to price policies. "Prescription information we can get in very close to real time, and we can use that to make predictions about health risks," he says. "That's useful for actuaries who are trying to price clients in as near to real time as they can get."

While predictive analytics tools have gotten easier to use, successful enterprise implementations still require collaboration among business analysts, statistics experts and database administrators, say users. "Data preparation can be 60% of the effort," says Lou Agosta, an independent technology analyst in Chicago.

But the biggest challenge may be in learning how to take full advantage of the opportunities that predictive analytics can provide. Developing the right responses is what takes the most time, says Harmon. "Having better predictive models has allowed everyone to reevaluate their strategies. That's where the intellectual capital is spent," he says. **54732**

ANALYZING THE OPTIONS

Predictive analytics tools are available as stand-alone products but are also increasingly embedded within other software. Options include the following:

- **Development workbench tool kits** are available from vendors such as SAS and SPSS. These vendors offer extensive suites of tools that include both model development and execution. For example, the server-based Clementine scoring engine from SPSS can run a model against a data set and return the results to a database or data warehouse. All include a development platform where users can create an application, says independent analyst Lou Agosta.
- **Databases and data warehouse software vendors** offer predictive analytics capabilities that may be adequate for some business needs as extensions to their products. Examples include IBM Intelligent Data Miner for DB2 and Teradata Warehouse Miner.
- **Enterprise application vendors** also offer limited predictive analytics features within their product sets. One example: SAP's Advanced Planner and Optimizer. The trend is toward greater integration of predictive analytics within line-of-business applications, says IDC analyst Henry Morris.
- **Industry-specific packages** offer predictive modeling targeted to the specific needs of a specific vertical market. They are available from SPSS and other vendors, but they're relatively new.

– Robert L. Mitchell

OUTSOURCING ALTERNATIVE

For some companies, outsourcing predictive analytics makes sense:

QuickLink 54848
www.computerworld.com

PreTell Fingers Refinancers

Planning on prepaying your home loan and refinancing through another vendor? Expect a call from your bank. LoanPerformance is about to launch PreTell, a predictive analytics application for lenders and other financial institutions that will analyze loans and return projected cash flows for them. "We're developing a prepayment scoring platform that tells who will pay off early in the next six or 12 months," says Richard Harmon, senior vice president of scoring and analytic services.

The system will also be the first from LoanPerformance that accesses live data, including property record data, demographics and loan-specific information. "It sends out the name and address of the loan or loans to score, matches that with the data vendors, pushes it back to the scoring platform and then automatically scores those loans," says Harmon. The service took three years to develop and is in beta with 12 customers. It's slated for release in July.

LoanPerformance built the analytic model using technology from Kxen Inc. in San Francisco. The company excels in large, complex data structures where many possibilities must be examined, says independent analyst Lou Agosta. Although Kxen isn't as big as other vendors, its technology has been embedded in products from other software vendors, including Business Objects SA, and is well regarded by users. "When I talk to their references, they are so enthusiastic about them," Agosta says. "It shows that there is real innovation going on in this area."

Eventually, PreTell could have a significant impact on the market for mortgage securities. "[PreTell] will lead to risk-based pricing of mortgage notes," predicts Harmon. But the more immediate benefit is that it will give mortgage servicers an opportunity to get their own offers to customers before they refinance.

– Robert L. Mitchell

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Lull in Action Is Time To Tie Up Loose Ends

The blackout at the end of the quarter is a chance for documentation and evaluation of new technologies. By Mathias Thurman

SECURITY MANAGER'S JOURNAL

MY COMPANY'S quarter-end blackout always means we're in for a slow week, since we can't make any changes to our production environment. When I have some extra time like that, I usually like to catch up on documentation and evaluate new technology, and that's what I did when this past quarter ended.

As I've mentioned in previous articles [QuickLinks 51226, 54514], our mass deployment of RSA Security Inc.'s SecurID tokens is a critical project, touching thousands of users. Failure is not an option, and the definition of *failure* could include a deployment that generates thousands of help desk support calls. To keep that from happening, documentation and training are part of the deployment strategy.

Happily, I was able to get some cycles from another department's technical writer, who created some Web content about two-factor authentication that can eventually be made available to the masses. If we start raising awareness early and drill some of the new lingo associated with this project into employees' heads, the deployment will have a better shot at success.

There are three important terms users must be familiar with. The first is *tokencode*, which refers to the number displayed on a token. The next is *PIN*, which is the personal identification number each user will define and use as a password. The third term is *passcode*, which the PIN and tokencode combine to form.

Those three terms are the usual causes of support calls in a SecurID rollout, and we want to clear up confusion beforehand so that users don't beset the help desk. We also hope to curb the number of support calls by finding a way to deploy the software tokens without users having to do anything other than set their PINs. We're diligently working on that, and I will report on our progress in my next installment.

WAP Strategy Session

On another front, I've been talking to Alpharetta, Ga.-based AirDefense Inc., which has an appliance for detecting rogue wireless access points that integrates with the Cisco access points we have already deployed en masse. I received one of the appliances to evaluate today, and I managed to get it racked and powered and will start testing within the next week or so. I also received several access points from Cisco that I will configure as sensors.

AirDefense claims that when the Cisco sensors discover an access point, its appliance can determine whether it's on our network.

I plan to deploy some low-cost access points that I ordered from Office Depot. I figure that employees who set up unauthorized access points will probably buy their hardware at a retail store rather than spend several hundred dollars on a Cisco access point. I ended up getting six different wireless access points/routers. I'll place four of them on our network at various locations and one on an external Digital Subscriber Line, which we use for troubleshooting external access issues. I'll power up the remaining access point, but I won't connect it to any networks.

AirDefense's technology could play a significant part in our strategy for detecting rogue wireless access points. We can't rely solely on scanning the network or grabbing the media access control addresses off of our switches. Those methods are also very important in our overall strategy, but if the AirDefense appliance is sound, we will have a robust approach to discovering unauthorized access points on our network. I'll keep you informed about this as well.

> **I figure that employees who set up unauthorized access points will probably buy their hardware at a retail store.**

Implications of Growth

The enforced downtime at the end of the quarter allowed me to contemplate the implications of the fact that our company is growing by leaps and bounds. We've added several thousand users and millions of dollars in servers and other infrastructure over the past several years. My department has deployed technologies such as two-factor authentication and Tripwire Inc.'s software for intrusion detection and prevention, and we're evaluating identity management software.

We're also getting ready to deploy disk encryption, and we continue to conduct vulnerability assessments at the network, host and application levels. My people are present at almost every major meeting concerning architecture, change control and project intake. We also write policies, procedures and guidelines and are responsible for the care and feeding of our entire security infrastructure. My department is solely responsible for everything from administration of our authentication systems to troubleshooting problems. We're becoming overloaded with work.

I continually make upper management aware of our workload and have requested additional head count, but I've always been met with resistance, mainly because of budget constraints. In large companies, it's pretty standard for the information security department to have one engineer for every 1,000 employees. I have seven engineers for a little over 8,000 employees, so we're about one engineer shy of the standard.

Relief may come in the form of four data center operations employees taking over security analysis. If executed properly, that move would alleviate a lot of the day-to-day burden now on the shoulders of the information security staff by shifting some of the operational and analysis work to security operations. That would allow us to focus on other security decision-making responsibilities: architecture, engineering, new and emerging technologies, policy enforcement and so on.

This plan is still in its infancy, and I'm sure there will be plenty of discussions around general responsibilities as this endeavor moves forward. ▶

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "Mathias Thurman," whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com, or join the discussion in our forum: **QuickLink a1590**

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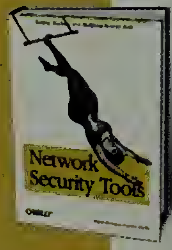
SECURITY LOG

Security Bookshelf

■ ***Network Security Tools*, by Nitesh Dhanjani and Justin Clarke (O'Reilly, 2005).**



This standard security book focuses on describing the common open-source tools available for conducting various types of network security assessments. What the book does that others don't is take a deeper dive. For example, Chapter 1 starts with a discussion of Nessus, a freely available network- and host-scanning tool, but then the authors describe in detail how to write plug-ins for it. From Web assessment tools to code-review utilities, this book is packed with solid and meaningful explanations, instructions for use and additional engineering-type information.

– Mathias Thurman

RSA Tool Eases App Security

RSA Security announced RSA BSafe Data Security Manager, middleware for software developers that simplifies and strengthens application security by putting security decisions and design in the hands of experts. Using a centralized, policy-based approach, RSA BSafe Data Security Manager is designed to ensure that applications meet business and regulatory requirements for protecting data.

Enterprise Security Certification

VeriSign Inc. introduced the VeriSign Security Certification Program. It is designed to assess an enterprise's information security program and certify that it meets VeriSign's requirements, which are based on best practices drawn largely from international regulatory and industry compliance requirements. The certification can also be performed at a business-unit, infrastructure or application level.

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Beyond Paper

The president of Xerox's Innovation Group tells how the company is dealing with a whole new definition of documents.

Q&A *After having reorganized late last year, Xerox Corp. is on a roll. The company's profits are up, thanks to rising sales of color printers and copiers, as well as a new focus on services, which now account for 20% of revenue.* **Hervé Gallaire**, *Xerox's chief technology officer and president of the Xerox Innovation Group, spoke with* Computerworld*'s Robert L. Mitchell recently about research and development projects in the lab, real-world applications and whether Xerox's move to services means the company is letting up on its commitment to hardware R&D. Stamford, Conn.-based Xerox registered more than 500 patents in 2004.*

What role does the Innovation Group play at Xerox? The technology that feeds into the products — the platforms that will become products — are being done in the Xerox Innovation Group. What we do is not just the technology, but also the intellectual property management. Our DocuShare product is also hosted here. It is a business unit, but Xerox is not a software product company, therefore I manage it.

PARC is a bit special because it used to be an integral part of our research and technology organization, but it has been spun off. We have enabled PARC to work not just for Xerox but for other partners.

How has the concept of the document changed, and how has Xerox adjusted? [Documents] have nothing to do with paper anymore. This is about finding information and structuring it inside the document, whether it's paper or electronic, and it's about connecting the document to a workflow. We're still about output, still about input, about scanning, about copying — but those are just some of the capabilities that need to be made available. Your multifunction [copy, print, scan, fax] device becomes part of an application.

What innovations are you working on that are likely to appear in products in the next 12 months? One is to use a digital camera as a scanner so that when you are mobile, you can take images of documents. The secret here is to develop software that will enable me to clean up all the errors, all the noise that is being introduced. The idea is that mobile workers can use cameras as scanners that can be introduced into normal workflows. This software could be loaded on the digital camera itself or as a service on the Internet.

Another example is something we call CopyFinder, which uses your multifunction device as a tool to search your repository of documents. The concept is you might have this document but you don't have much information that says where the source file is. So how do I find that? I could use my search tool and type a couple of keywords, but I'll probably find lots more answers than I care to find. What we do instead is use the source page and do a scan. We analyze enough of the text to be pretty sure that we can find a document that has a very high similarity to this. We see that as a fairly effective way of doing search for certain types of applications.

Hervé Gallaire

AGE: 60

TITLE: CTO, Xerox Corp., and president of the Xerox Innovation Group

RESPONSIBILITIES: Oversees six of Xerox's research and technology organizations, including its intellectual property unit, its DocuShare document management software business and Gyricon LLC, a start-up that manufactures e-paper displays.

What other technologies are you working on that may have a big impact? We have now an image classifier, a mathematical algorithm that tries to find points that can be used to categorize the image and distinguish it from something else. You could then combine this capability to search on text and on images, [but] it's only a categorizer at this time.

What are you doing in the area of document security? The GlossMark technology is one where we print something you can see. If you copy it, the GlossMark will not be copied. So the copy is not the same as the original. The GlossMark is a way to use the toner to create an image that's visible given certain light characteristics. If I move the document under a light, I will see an image appear, and if I move it to a different position, it disappears. But it's not an absolute security, in a sense, because it's visible.

Xerox has been an innovator in the color printer market. What will users see in terms of cost and capabilities in the next year? Cheaper, faster, maybe higher quality. I don't know if you will have [them] all at the same time. You can almost determine the cost of a product by putting it on a scale. We have these curves that show the correlation between weight and cost. That means technically that we need to replace a lot of the heavy metal and plastic with more electronics, putting more smarts inside.

Xerox has repositioned itself from a hardware-focused company to a services-focused company. What does this mean for Xerox in terms of its role as a technology innovator? About 20% of revenues are coming from services now. Xerox today spends about $850 million [on research and development]. Out of that, research on technology is about $150 million [including the PARC spin-off], and inside that, I spend one-third on the software and services side, one-third on the imaging side and one-third on the hardware. I don't believe that we will decrease the hardware [spending], at least for the next few years.

Xerox and PARC are renowned for developing key elements of IT infrastructure that other companies capitalized on. Is Xerox better prepared today to exploit its own innovations? One of the mechanisms we put in place is the Innovation Group. We have responsibility for both the creation of the technology and the exploitation of the technology. What we have done by putting the two together is to make sure somebody would watch technology and, when it is not used by Xerox, to try and decide how to capitalize on it in the best possible way. Xerox cannot exploit everything, so you need alternate mechanisms. We have very impressive licensing. We want to license it if we don't use it. **54751**

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BRIEFS

AppIQ Announces Storage App Suite

■ AppIQ Inc. in Burlington, Mass., announced StorageAuthority Suite R4.0. The storage-area network management and storage resource management software allows for centralized control of heterogeneous storage infrastructures, according to AppIQ. The suite centrally manages distributed Network Appliance Inc. network-attached storage filers, fully integrates backup reporting and fault analysis for Veritas Software Corp.'s NetBackup, and works with IBM TotalStorage Enterprise Storage Server. Pricing depends on the module of the suite being purchased and customer needs.

Peregrine Updates BI Analytics Tool

■ San Diego-based Peregrine Systems Inc. has announced BI Portal 5.2. The predictive analysis tool is aimed at helping IT managers make better decisions around the financial management of their IT assets, Peregrine says. The portal, which runs on Windows Server 2000 and 2003, IBM AIX and Sun Solaris, pulls data from Peregrine's ServiceCenter and AssetCenter software systems. BI Portal 5.2 starts at $7,000 for a five-person package, or $1,400 per user.

Centennial Releases IT Asset Manager

■ Centennial Software Ltd., a Portland, Ore.-based developer of IT asset discovery and security management systems, has released its Discovery 2005 network-inventory and IT asset management software. New features include user-configurable dashboards for key audit data analysis, a portal that provides access to software licensing information, and other updates that help provide full visibility of all network assets, according to the company. The software will begin shipping next month and will be priced starting at $22 per seat.

CURT A. MONASH

Looking for Analytic App Dev Tools

THE ADVANCE OF analytic technology is hindered by a collective software industry blind spot: There is no clear, convincing vision of the future of analytic application development tools. This makes it hard for enterprises to firm up their analytic technology strategies.

CURT A. MONASH is a consultant in Acton, Mass. You can reach him at curtmonash@monash.com.

Fortunately, there are work-arounds to this problem. But before discussing them, here's a quick review of how the industry got itself into this bind in the first place. (For more historical detail, see my new blog, specifically the post *www.computerworld.com/blogs/node/280.*)

Confusingly, query/analysis/ad hoc reporting products for the most part *are* application development tools. We speak, and rightly so, of business intelligence tools being used to create (and deploy) departmental BI applications. Enterprise reporting products are also app dev tools — just think of how many application software vendors resell Crystal Reports. And more specialized analytic tools — such as statistical or simulation packages — generally have custom programming languages at their core.

Nonetheless, in recent years BI vendors have collectively taken their eyes off the app dev ball. The reason is twofold. First, BI products may operate like app dev tools, but they are generally sold like actual applications. A few years ago, BI vendors decided that applications had higher price points than dev tools and explicitly emphasized the "application" aspect of their offerings. Second, the BI industry has even more recently refocused on system software — but the emphasis has been almost entirely on grand integrated enterprise analytics servers, not on the tools that make them useful.

Thus, some interesting analytic app dev products have fallen between the cracks. For example, Cognos had an app dev lead in Metrics Manager, while Business Objects had some interesting pieces in the oddly named Application Foundation. However, as far as I can tell, neither capability has been significantly advanced in several years. Nor has Oracle's BI Beans amounted to much. And the same goes for most of the rest of the BI industry.

There are two exceptions to these trends that spring to mind. One is enterprise information integration, or EII, when it morphs all the way into composite apps. The other is SAP's xApps, coincidentally also a composite apps strategy. I say "coincidentally" because the composite apps aspect of EII involves knitting technical processes such as Web services together, while the composite apps aspect of SAP's strategy is focused on the business process side.

But when combined, these examples suggest that if and when good analytic app dev tools finally come together, there will be a strong composite apps flavor. There almost has to be: Analytic/BI user interfaces need to be flexible, so conventional application generation wouldn't work.

There's also another piece to the story. For the past 15 to 20 years — i.e., the entire BI era, and probably the executive information systems era as well — the fundamental BI app dev paradigm has been declarative rather than procedural. This has been true on both the data access and user interface sides, and that's pretty much all there's been to the apps, some simple arithmetic for calculated fields excepted.

Well, calculated fields begat key performance indicators (KPI), and now there's a lot of them. A whole lot. A hard-to-manage whole lot. Don't believe people who say that the right number of KPIs for an enterprise is seven; 700 often isn't enough. Seven may be enough for one person in an enterprise, or all of one person's direct reports, but I question even that. At every level of the organization, and in every department and subdepartment, the appropriate KPIs are different. And yet another level of complication is the need for alerts associated with all those KPIs. Ultimately, the BI vendor with the best app dev capability may be the one that makes this KPI explosion easiest to manage.

The best work-around I can think of for the lack of tools (other than just sticking with packaged apps, which aren't far enough along for that to be a good idea) is modularization — deciding that transactions are transactions, analytics are analytics, and the way to knit them together is via composite app dev tools. This still leaves an annoying problem with KPI management, but you'll just have to grin and bear with that part until the entire BI industry gets its act together. **54882**

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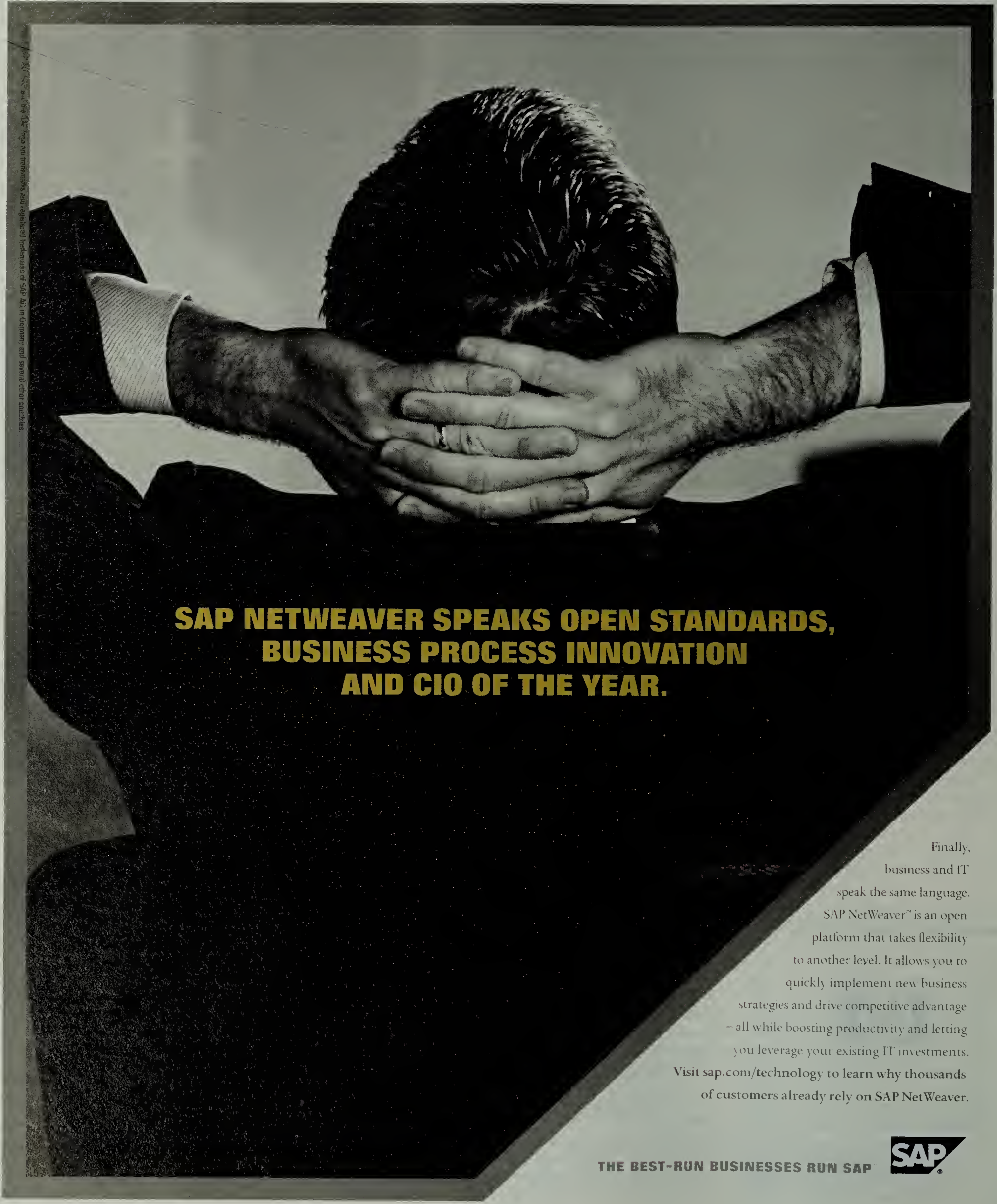
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MANAGEMENT

06.13.05

Q&A

Get Ready: The Rules Are Changing

When business processes become commodities, all the rules change, says Babson College researcher Thomas Davenport. Here's what CIOs need to do about it. **Page 38**

Career Watch

There's a new title on the rise in corporate IT: senior VP for data management. Plus, a survey reveals that Silicon Valley's top execs are still getting huge pay increases, and we look at the behavioral differences between CIOs and CEOs. **Page 42**

OPINION

Business Cases: What, Why and How

If your IT priorities aren't based on business cases, you're shooting in the dark, says Bart Perkins. Here's why you need to build them and how. **Page 43**

GENE BEDNAREK/SILVER IMAGE

CHIEF MEDICAL OFFICER KEITH STEIN and CIO ROLAND GARCIA led an interdisciplinary effort to design BMCS's fully electronic environment.

THE PAPERLESS HOSPITAL–Really!

HOW BAPTIST MEDICAL CENTER SOUTH BUILT AN ALL-ELECTRONIC ENVIRONMENT WHILE BIGGER, MORE PRESTIGIOUS HOSPITALS FAILED. BY JULIA KING

LESS THAN TWO YEARS AGO, cows grazed on the Jacksonville, Fla., site of Baptist Medical Center South (BMCS). Today, physicians at the brand-new hospital make their rounds toting wireless devices to check lab results, view X-rays, update charts, order prescriptions and send and receive e-mail.

At bedsides, nurses use wireless devices on wheels, or WOWs, to record progress notes and check doctors' orders. If they administer medicine or change a bandage, the supplies they use are electronically tracked and matched by bar code to individual patient records, enabling more accurate patient billing and automatic inventory replenishment.

What's conspicuously absent everywhere is paper. And for a busy hospital whose staff has just a few weeks of experience working in a totally electronic environment, the overall atmosphere is strikingly tranquil. The doctors and nurses seem completely confident and competent in their new digital workplace.

Yet digital by no means equals impersonal. Original artwork graces the walls, waiting rooms have the cozy feel of a private library, and lots of windows look out on the hospital's well-tended gardens.

You have to wonder: How did this small, 92-bed community hospital manage to succeed where larger and more prestigious hospitals have failed?

For example, Cedars-Sinai Medical Center in Los Angeles pulled the plug on its $34 million electronic medical record (EMR) system after just three months in 2002 because staffers refused to use it. Nationwide, only about 6% of hospitals have computerized systems for doctors' orders.

"It's all about changing the culture," says BMCS CIO Roland Garcia.

Seize the Day

From the beginning, Garcia says, he and other hospital executives realized that they had a unique opportunity to build not just a new hospital, but an entirely new culture and health care delivery model that relies heavily on technology to enhance patient care and safety.

To seize that opportunity, they first had to secure the buy-in of the area's independent physicians, who have a choice of where to practice.

Before the ground had been broken, BMCS recruited a physician advisory board, which worked with cross-functional IT and operations teams on virtually every aspect of the hospital project, from choosing which technology to use to conducting exhaustive simulation testing in the months before the hospital opened on Feb. 16.

The teams spent months parsing the thousands of steps and processes involved in treating patients. Everything was dissected, from patient scheduling

FINE-TUNING

BY THE TIME BMCS opened on Feb. 16, everyone in IT had plenty of experience playing doctor, nurse and patient. That's because virtually every clinical process built into the electronic medical record system was simulated and tested rigorously to ensure a smooth, integrated workflow once the hospital was in operation.

"At one point, we took a very large team and modeled the environment with several kinds of wireless devices," recalls Mike Robin, IS program manager. "We had them using different types of applications and placing as many orders and doing as much documenting as possible. We stressed the applications, the network and the servers, and the first time, we brought the system completely down."

Some database tuning and the addition of several servers resolved the problem. "But that's the kind of functionality issue we might not have found until we went live had we not done the simulations," notes Dave Dully, director of technology services.

Dully wanted to deeply involve IT in the simulation testing as a way to educate IT workers about the systems they would be supporting.

"There's a greater reliance on IT in a wireless environment," he says. "And we don't want any IT person to see their role as very compartmentalized. We want them to have a sense of urgency around the physician."

Robin says that sense of urgency is repeatedly emphasized at weekly meetings of the high-availability group he helped put together within IT. Workers from IT also regularly sit in the emergency room and stand side by side with nurses on the floor as they make their patient rounds so they can see glitches in the system and fine-tune it.

That way, Robin says, "programmers can see that they're not just crunching numbers. What they do really does affect patient care."

– Julia King

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and clinical procedures to discharge and billing.

Ordering and filling a prescription, for example, involves 148 discrete steps carried out by different people and departments, notes chief medical officer Dr. Keith Stein, the project's executive champion.

The challenge was streamlining those steps and then accurately mapping the best possible process into the hospital's EMR software, which is from Kansas City, Mo.-based Cerner Corp.

That's where BMCS's clinical informatics team comes in. Headed by Trish Gallagher, a registered nurse, the 10-person informatics group is composed of technology-savvy clinicians. From the beginning, they worked side by side with about 65 programmer/analysts and a core group of physicians, nurses, dieticians, physical therapists and other clinical and ancillary personnel to define and refine each and every process before it became part of the computerized system.

"Every week, we had two-hour meetings where we focused on two things: our culture and the [user] experience," says Gallagher. "We wanted to improve current pitfalls [in processes at other Baptist facilities] and find out exactly what users wanted to see in the system."

Senior project manager Serrine Dully describes the informatics team as "middle-ground translators."

"They communicate physicians' and nurses' needs to IT programmers," she says, and that translation makes all the difference. "You cannot send a programmer to a physician or nurse and have this kind of outcome."

One of the biggest challenges, Dully says, was getting clinicians to break away from thinking about the way they had always done things in the past. "We started every one of our meetings with a speech in which we basically told them we wanted them to think outside the box and ask themselves if they had every opportunity, how would they do things differently," says Dully. "We never quit hearing, 'But we've always done it this way.' But eventually, we heard it less and less."

Customized Care

The informatics group and IT are also working with physicians to develop "care sets" within the system. Care sets are groups of specific procedures, tests and medications that an individual physician may use to treat a certain condition or illness, such as pneumonia.

Rather than separately ordering blood tests, X-rays and other lab work, the physician can simply order the care set that he has customized in the system.

"Care sets make things easy," notes Jim Altomare, a physician at BMCS. "You can also build your own care sets using templates."

He explains the lure of developing personalized care sets this way: "I want to do my patient care. I don't want to learn a new system."

Physicians also have wireless access to external sources of medical information as well as full X-ray images, which enhances patient care, according to Stein.

"With built-in links to evidence-based medicine, if you're at an impasse in your treatment, you can go out on the Internet and get more information," he notes.

Altomare recalls a situation in which he was able to convince a recalcitrant elderly patient that she had a case of pneumonia that required in-hospital care. He pulled up an X-ray of her lung on his wireless device, and seeing the X-ray then and there convinced the patient; she agreed to be admitted for treatment.

Having wireless access to previous test results in a fully electronic medical record is especially valuable to doctors in the emergency room, says physician Ted Glasser. "Having all of that information helps you make an evaluation on the spot," he says. "Either send a person home because what you're seeing doesn't represent a difference from their previous health state, or — if it represents a big difference — act aggressively."

The system also creates an ID and time stamp each time a record is accessed or a process is completed, building an ongoing electronic history and timeline. This helps with insurance and regulatory compliance requirements. And ultimately, it also helps deliver better patient care, according to Garcia.

"Capturing and time-stamping information allows us to come back and do analyses and see where we can make improvements," he notes.

Garcia says that all of this information saves time, whether it's time spent looking for X-rays or tracking lab results. "If the technology can reduce hours from ordering meds or completing blood work," he says, "it all goes directly to improving patient care, which is why we are here." **54692**

Managing the Project

ENABLING CLINICIANS to read X-rays, write pharmacy orders, order lab tests and review a patient's medical history all from a single wireless device required more than a cultural shift at BMCS. For IT, it involved integrating no fewer than 100 different departmental software applications and configuring the main electronic medical record system software. It also involved months of integrated testing and then more months of simulation training. All the while, the hospital's opening date of Feb. 16, 2005, remained firm.

The hospital's 30-person clinical implementation team accomplished it all on time and on budget by following a course of action that project manager and IS director Mary Pat Corrigan refers to as "totally backward project management."

"We had a date when the building was to open, a date it would be built, and we went backward from those dates," she says. "It was all about firmly establishing major key dates upfront, whether people thought they were achievable or not, and then managing to those dates."

"We also made decisions rapidly," notes Mike Robin, IS program manager. It helped that the implementation team – composed of both IT and clinical personnel – had a strict escalation process for problems and disagreements.

"If there was a [software configuration] decision that changed the workflow, it would go to the IT architecture group and to the clinical people and then come back down to us," Robin says. "If a change affected physicians, it would go to the physicians' advisory board."

All problems were logged in an Excel spreadsheet, and key delivery dates were tracked using a simple electronic dashboard approach.

"We were relatively dictatorial that every issue go into the database, whether it was about the Cerner software, the SMS scheduling system [from Shared Medical Systems Corp.] or some piece of departmental software," Corrigan recalls. "We always ended our meetings by asking ourselves what we weren't thinking about, where there might be holes."

Most times, those questions were answered by clinicians like Linda DeVero and Bonnie Williams, both registered nurses in the informatics group who were part of the software implementation team.

"They were very good at recognizing the downstream impact of any changes" in the software and workflow, notes Corrigan. The bottom line, she says, is that "IT drove the implementation, but the clinicians drove all the decisions."

– Julia King

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GET READY: The Rules Are Changing

Business processes are becoming commodities, and IT is leading the way.

Q&A

When business processes become commodities, all the rules change in ways that can revolutionize business, says **Thomas Davenport.** *In this month's* Harvard Business Review, *Davenport, academic director of the Process Management Research Center at Babson College in Wellesley, Mass., lays out his reasons for believing that those changes are beginning to happen. He told* Computerworld*'s Kathleen Melymuka what he thinks business process commoditization will mean to business and IT.*

Let's start with the basics: What is a business process? It's an abstraction — a series of pictures or words or diagrams that describe the way a particular piece of work is supposed to be accomplished. It could have a greater or lesser degree of connection to the way work is actually done.

What's the value of standard business processes to business and IT? For virtually anybody, a standard process can be a starting point — a point of departure from which to design a new process. When people are designing organizational charts, they often look at other organizational charts.

It also simplifies the commodity stuff that people do. There are so many processes in an organization that don't confer any competitive advantage, and doing them in an innovative way wouldn't make much difference to revenues or profits. So you might as well do them in a standard way. And application packages all assume some sort of process by which they're used.

What sorts of revolutionary changes do you foresee if standard processes are adopted in a big way? Over the years, I've seen this whole idea of business process outsourcing become popular, [but] there is really no basis for choosing to contract with external suppliers. You can turn accounts payable over to an outsourcer, but you have no indication that the outsourcer can do better — no objective measure except how shiny the consultant's shoes were. So it often comes down to cost.

If you could decide with some confidence that someone could do better than you could, that would be a big impetus for the whole idea that we are going to do only those things we think are distinctive and let others do the rest. Disaggregating the company into commodity and distinctive activities could be greatly accelerated if process standards took off.

And you see this beginning to happen? There are these really cheap resources available in places like India, and we have a process standard in CMM [the Capability Maturity Model] that says, "People can do this as well over there — if not better — than people here." CMM isn't a perfect standard, but it's certainly decent. That gave people a lot more trust that they could hire someone they may have never seen to do work, so that's starting to happen, but it's not as far along in some other business process areas.

You talk a lot about CMM. Why do you think it has been so successful? The government had a lot to do with it. For any of these standards to take off, you need a bunch of people getting together to agree, or you need one big 800-pound gorilla to say, "If you want to do business with us, here's how you'll do it." In the case of CMM, the government said, "If you're going to write code for us, you have to be Level 3," and that provoked a host of systems integrators, both here and around the world, to move in that direction.

The simplicity of it is another reason. When people try to develop a standard, they often get very complex about it. But the simplicity of Level 1 to Level 5 was very appealing. And the fact that it had a group like the Software Engineering Institute — people could get together and talk about how to implement CMM, so it became a little social movement.

[illegible]

Here are three kinds of evolving process standards and how they apply to business:

STANDARD	WHAT IT DESCRIBES	EXAMPLE
Process activity and flow	The key steps typically performed in a process and the order in which they occur	The SCOR standard lays out five key steps in a supply chain: plan, source, make, deliver, return. Sublevels describe each step in increasing detail.
Process performance	How much time and cost is involved in each step of a process	Using the supply chain example, the time and cost of each step, such as ordering and receiving an item from a vendor.
Process management	Factors necessary for a well-managed process	In a supply chain, a process model that's been agreed-upon, owned, communicated to suppliers and customers, linked to those of your business partners, measured and so on.

Some standards – such as the ISO standards in manufacturing – have been around since the 1940s. Why, after all these decades of work on standards, do you think we're approaching some sort of critical mass of adoption? There are all these potential providers of services where you can save a lot of money, so the need for standards is higher. And there's more electronic interchange between companies than there has ever been, and things like XML have made it somewhat easier to agree on how people will exchange information in these standard process environments.

How soon will this happen? Everybody always thinks things will be revolutionary, and it turns out to be evolutionary because it takes so long to agree on things. And there's a natural tendency to go slowly on process standards because if you can maintain some competitive advantage by your process, you want to do that until your customers and suppliers force you to standardize it. It's happening faster in some areas than others. Certainly, supply chain has taken off pretty dramatically. The CMM stuff is going great guns, and also I've heard in the past year that 20 or so organizations are doing stuff with ITIL [IT Infrastructure Library], which is a process model for IT.

If I'm a CIO, what should I be doing about all this? Since IT is probably the most advanced of the business processes to use standards, you should be thinking about ITIL and CMM and other performance standards to see what makes sense for you to adopt within your own shop. Then, since a lot of systems relate to areas where there are already pretty well-developed process standards, like SCOR [Supply-Chain Operations Reference Model] and ISO 9000, you ought to be familiar with how your processes relate to those and what that means to how you relate to your software vendors. Is there a standard in your industry for how you do basic activities? If not, does it make sense to start developing one? So there are a lot of things CIOs need to be thinking about and acting upon.

54698

This is the latest in a series of monthly discussions with Harvard Business Review authors on topics of interest to IT managers.

MORE ONLINE

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Beyond Business Intelligence: Using Enterprise Analytics to Drive Fact-Based Decisions

Newton, Massachusetts · June 28, 2005

Boston Marriott Newton · 2345 Commonwealth Avenue

7:45am to 8:15am	Registration and Networking Breakfast
8:15am to 8:25am	**Introduction and Overview** Don Tennant, Editor in Chief, Computerworld
8:25am to 8:55am	**Trends in Enterprise Analytics** Henry Morris, Vice President and General Manager, Integration, Development and Application Strategies, IDC
8:55am to 9:25am	**Case Study: The Nature Conservancy** Connor Baker, Director of Business Information, The Nature Conservancy
9:25am to 10:15am	**How Technology is Transforming Business Intelligence** Keith Collins, SVP and Chief Technology Officer, SAS Fran Burke, Manager - Eastern Area, Business Applications Group, Intel
10:15am to 10:45am	Refreshment and Networking Break
10:45am to 11:15am	**Case Study: Niis/APEX Group Holdings** Jody Porrazzo, Ph.D., Director of Economic Risk Strategy, Niis/APEX Group Holdings
11:15am to Noon	**Panel Discussion – From Gut Feel to Fact-Based Decisions: Real-Life Business, Political and Technology Lessons Learned on the Front Lines of Enterprise Analytics** Moderator: Don Tennant, Editor in Chief, Computerworld Panelists: · Connor Baker, Director of Business Information, The Nature Conservancy · Jody Porrazzo, Ph.D., Director of Economic Risk Strategy, Niis/APEX Group Holdings · Henry Morris, Vice President and General Manager, Integration Development and Application Strategies, IDC · Keith Collins, SVP and Chief Technology Officer, SAS · Fran Burke, Manager - Eastern Area, Business Applications Group, Intel
Noon	Program Concludes

Selected speakers include:

Connor Baker
Director of Business Information, The Nature Conservancy

Jody Porrazzo, Ph.D.
Director of Economic Risk Strategy, Niis/APEX Group Holdings

Henry Morris
Vice President and General Manager, Integration, Development and Application Strategies, IDC

Keith Collins
SVP and Chief Technology Officer, SAS

Fran Burke
Manager - Eastern Area, Business Applications Group, Intel

Don Tennant
Editor in Chief, Computerworld

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MANUELLO PAGANELLI

Alignment: What It Really Means

Here's how to tell if your IT group is really aligned with your business – and what to do if it's not.

By Troy D. Kinsey

IT MENTOR

IT DEPARTMENTS are often perceived to be ineffectual, slow to respond to business needs and even an encumbrance to corporate progress. Many CIOs believe that their IT departments are aligned with the business, but I've seen only a few companies actually achieve this and have the bottom-line results to prove it. A 2004 survey by *CIO* magazine showed that while 80% of IT senior managers believe that IT and business are aligned, only 30% of business senior managers agree.

Let's look at how to determine whether your IT group really is aligned and how to achieve alignment if it's not.

My experience in leading both operations and IT departments has convinced me that it makes sense to look at three areas: process, metrics and employee development.

Process: Have you established a cross-departmental process for prioritizing, approving and implementing those projects that add sufficient value to the business? Do you ensure that both IT and business are engaged throughout the entire project life cycle?

Involving IT throughout the life cycle of a business project can greatly increase the breadth and diversity of creative business solutions; ensure the consistent use of corporate systems, infrastructure and support services; and leverage economies of scale. As my colleague Galina Cherny, senior director of IT at Universal Studios, notes, "The desired functionality quite often already exists in some form elsewhere in the company, or there are other business units who would benefit from the same solution."

But leveraging IT across business units works only when IT understands business operations and challenges. For that to happen, IT and business have to work as a team.

Metrics: Do you integrate IT and business objectives and measurements of success? Do you use incentive programs that incorporate these integrated objectives?

IT departments are typically measured and compensated based upon systemwide stability and problem-resolution response times. Business units are generally rewarded for adapting and responding to ever-changing customer needs. Because these goals conflict, departments' actions tend to conflict with one another. In addition, incurring technology infrastructure costs without agreeing upon a set of business metrics leads to mushy IT decision-making and corporate waste. The solution is to establish a consistent set of standards for measuring return on investment.

Employee development: Does your company have cross-departmental training and mentorship programs that enable IT personnel to understand the daily operational challenges and needs of the business and external customers? To keep IT integrated, IT staffers should be a part of the problem-solving team whenever the business faces a challenge.

How to Align

If the alignment between IT and the business falls short in your company, here are some tactics to improve it:

Increase the level of understanding between IT and the business. Any activity that increases communication between the two groups is a good starting point. Have IT employees spend time sitting alongside business employees as they work. At the executive level, the CIO should meet frequently with each of the business unit executives to learn more about the challenges that they face.

Develop a consistent strategy for prioritizing projects. Have each business unit agree on a strategy for prioritizing projects across all business units, and post an agreed-upon and prioritized calendar of all projects. That nails down priorities and commitments while increasing understanding of resources-to-projects constraints.

A caveat: All business units must agree not to establish renegade IT departments. I have seen more than one business executive effectively alienate the entire IT department by insisting that it support software that it played no role in developing.

Integrate IT and the business into a single project life cycle. Consistent improvement in merging business process re-engineering with technology happens only when you leverage the skills and experience of both areas. The alignment of goals, processes and incentives should apply to project managers, developers and users, including corporate management. Establishing a cross-departmental oversight committee or project management office can help project teams traverse political hurdles and engineer business change.

Establish a consistent cross-departmental incentive system. Some companies are so successful that they move their IT departments from cost centers to profit centers. They do so, in part, by ensuring that development projects tie directly back to measurable business goals. Project teams must continually ask and answer two questions: "Which business problem are we trying to solve?" and "How are we going to measure our solution's impact on this problem?" In my experience, these two questions are not asked often enough or with sufficient objectivity. Companies that ask these questions can then create and measure cross-functional (IT and business) projects based on standard bottom-line criteria. This upfront investment in clarifying common measurements of success focuses everyone's efforts on tangible business problems instead of technology or process agendas.

Strategic IT management is critical to the success of most businesses. The depressed and turbulent conditions of the past several years have left many companies with decreased staff levels, unfinished projects and ever-increasing customer demand. This is an ideal time for corporations to align IT and business priorities, consolidate strategic IT operations and standardize project development methodologies. In other words, it's time to reposition IT as a strategic value-add to the business. **54696**

Kinsey has more than 15 years of software engineering management experience in a variety of industries. He teaches Internet business and technology at the University of California, Berkeley, and project management for the operational management department at the University of Southern California.

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Career Watch

EXEC PAY Peaking in The Valley

Despite the struggles still afflicting the high-tech economy, top executives in California's Silicon Valley were compensated last year at levels nearly even with those at the height of the Internet boom, according to a survey conducted by the *San Jose Mercury News.*

According to the survey of 728 Valley executives, their pay rose 57% in 2004 to a collective $2.1 billion, not far below the 1999 peak of $2.3 billion. Average pay for those executives was $2.9 million, and the median was $758,520. The paper included salary, bonuses and stock-option gains among the factors in its rankings, with stock options accounting for most of the loot. At the top of the list was Yahoo Inc. CEO Terry Semel, whose $230.6 million in compensation last year was the third-highest yearly pay package in the region's history.

Meanwhile, Joint Venture: Silicon Valley Network reported that average pay for workers in the Valley declined by 1%.

CIO to CEO: Moving Into the Corner Office

Executive recruiting firm Korn/Ferry International has found no hard evidence of a glass ceiling for CIOs. Instead, writes senior client partner Simon Wiggins in an article published on *Computerworld.com*, the rise to the position of CEO, as with promotional paths to other C-level spots, is based on merit, behavioral style and desire. But the firm's research – using data on more than a half-million top executives, including nearly 1,500 senior-level IT executives – revealed important differences, as well as similarities, in the ways in which CIOs and CEOs approach critical leadership issues. Among the findings reported by Wiggins:

- Both CIOs and CEOs demonstrate an open, outgoing leadership style that enables them to engage with others on their terms.
- By instinct and by training, CEOs focus on strategic issues, demonstrating a strong focus on action and making decisions quickly with a low likelihood of changing their minds. CEOs are more likely to steer than to adapt. CIOs, on the other hand, tend to experience less control over situations than do CEOs, and they are accustomed to remaining more analytical and adaptable than their CEO colleagues.
- CIOs tend to demonstrate less tolerance for ambiguity than do CEOs. This may stem in part from the need to reduce ambiguity in the IT realm through technical standards and integration of complex IT systems and processes.

The full article can be read online at QuickLink 54265.

Paul Groce

TITLE: **Partner**

COMPANY: **Executive search firm Christian & Timbers, New York**

Q&A

Over the past few months, Groce says, he has conducted five searches for executives to fill a new title at large companies: senior vice president of data management. Groce spoke with *Computerworld* contributing editor Jamie Eckle.

What are the factors prompting companies to elevate the role of senior vice president of data management? The explosion of data is driving data-related management roles to a higher level. While I am cautious about the specificity of the "SVP of data management" title due to differences in corporate titles across industries, it is certain that corporations are placing greater emphasis on the areas of data storage, data architecture, data warehousing and data analytics.

In the past 12 months, we have seen a marked increase of interest in world-class talent with expertise in these areas. We have conducted a significantly larger number of senior-level talent searches in the data space, probably as many as we saw in the previous five years combined.

Simply put, data used to be a commodity, an underutilized asset, and it came in smaller quantities. Today, a company's critical business data is growing exponentially. One 2004 report by Teradata found that over half of surveyed executives said that their company's data doubled or tripled over the previous year. Client demands, regulatory archiving requirements, storage and backup requirements, and duplicative storage procedures are all responsible for this.

What are the salary ranges you're seeing for this role? Salaries, of course, depend upon the industry and size of the company. What is fair to say is that data executive roles exist today at a higher level of the organization, and as a result, compensation has increased. This is a hot area. Professionals who were previously buried deeper in the organization today are more visible to the CIO and to the business. In one case, I can point to a situation where data is so important to the company that a separate group was created, with the data analytics executive on a level commensurate to the CIO.

How do these new managers interact with top-level IT executives, the CIO and business unit leaders? The answer depends on the specific focus of the role. The purer engineering, planning, architecture and operations roles are certainly tied more closely to the CIO than to the business. These executives typically sit two levels below the CIO, reporting to the head of infrastructure. But the world-class leaders in this area are all very cognizant of their business partners' needs. Data warehousing and analytics executives are often hybrids, typically more closely linked with the business and often sitting outside the CIO's organization. These executives may report directly to the business.

As compared to years ago, these executives enjoy significantly greater visibility and business-impacting responsibility. Think of the competitive advantage all companies can realize from analyzing data. The ability to collect data continues to increase. Credit card purchases, affinity program tracking, point-of-sale systems, pharmaceutical prescription tracking, contact center/CRM input and Internet-traffic monitoring systems are all examples of data feeds collected today but likely not 10 years ago. The companies best able to aggregate, analyze and utilize this data will outpace the competition. For this reason, companies are searching for the people who can turn this vision into a reality. **54365**

More for Your Money

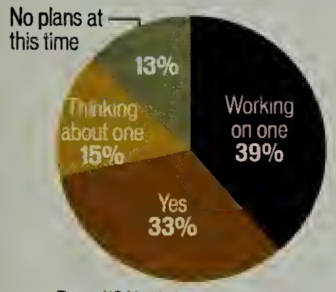
Using housing and living costs, local salary and unemployment figures, and 2,500 benchmark jobs, Salary.com Inc. calculates that these are the five cities where workers get the most for their paychecks:

1. **New London, Conn.**
2. **Huntsville, Ala.**
3. **Baltimore**
4. **Harrisburg, Pa.**
5. **Tulsa, Okla.**

QUICK HITS

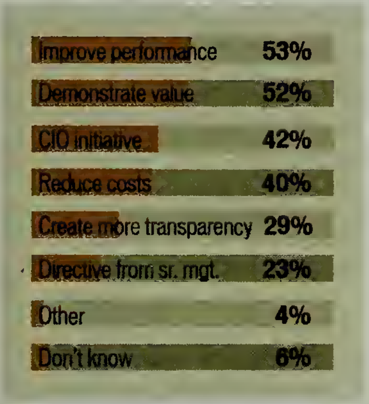
IT Metrics

Do you have a formal IT measurement framework in place?



Base: 112 North American companies

What motivated the measurement?



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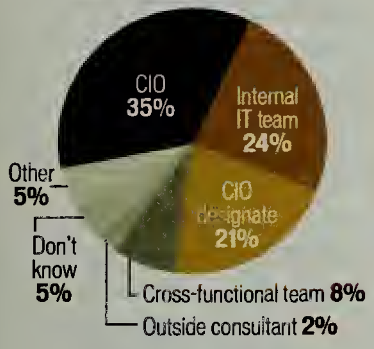
(multiple responses allowed)

Who led the measurement effort?



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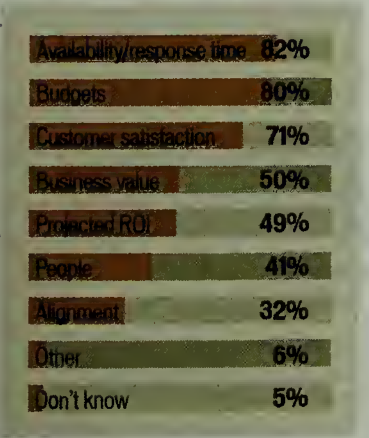
What do you measure?



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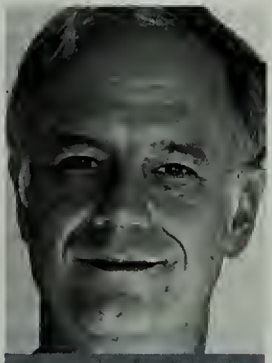
SOURCE: FORRESTER RESEARCH INC., CAMBRIDGE, MASS., APRIL 2005

BART PERKINS

Business Cases: What, Why and How

BUSINESS CASES ARE ESSENTIAL to good business decisions and IT success. They provide the foundation for informed decisions about what to fund, what to cut and how to set IT priorities. Moreover, they help set corporate expectations by accurately stating the benefits that will result from new programs.

Many IT organizations resist building business cases. A familiar excuse is that they are just too much work. Developing and using business cases requires significant time and effort. Bruce J. Rogow of Vivaldi Odyssey and Advisory estimates that a comprehensive business case costs between one quarter and three quarters of 1% of a project's total development cost. Although this may appear to be expensive, it's much cheaper than taking a massive write-off down the road.



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Some organizations argue that business cases aren't applicable to their industries. In fact, business cases are crucial to every industry, including government and the nonprofit sector. Every organization needs a consistent way to evaluate potential investments on the basis of data and reason, rather than on passion alone.

Business cases come in various shapes and sizes. At minimum, an effective business case does the following:

- Defines the problem and the proposed program's objectives and scope.
- Describes business and technical assumptions and alternatives considered.
- Provides estimates for resources, scheduling and costs.
- Describes major development and operating risks.
- Quantifies tangible benefits and describes intangible benefits.
- Predicts financial return.

Use the following guidelines to get the best results from your business cases:

Establish a template. Everyone has a favorite business-case format. Unless a single corporate-level template is mandated, making true apples-to-apples comparisons becomes difficult, if not impossible.

Assign responsibilities appropriately. IT shouldn't prepare a business case by itself. The cross-functional team should establish the project objectives, scope, major assumptions and risks. The executive sponsor must quantify the project's benefits. Finance should provide standard costs for each IT activity and resource (programmer/hour, gigabyte/month and so on). IT needs to define the technical approach, resource requirements, schedule and cost.

Estimate costs and benefits accurately. Accurate estimates depend on thorough research, standardized estimating guidelines and a consistent cost structure. At one of my client companies, two groups calculated hourly rates differently. One group simply divided programmer salaries by 2,080 hours at work per year. The second group combined salary, benefits and occupancy costs, then divided by 1,700 productive hours. This resulted in a more accurate but much higher figure. On the surface, it appeared that the first group could deliver its projects less expensively, but that was blatantly untrue.

Centralize the evaluation process. CIOs need consensus and support from other executives to set IT priorities successfully. This must come from one centralized executive group. Surprisingly, many companies have no such group or, worse yet, have multiple groups with overlapping or conflicting responsibilities.

Fund all projects from a single pool of capital. Many companies separate IT capital from "plant and equipment" capital. Sophisticated companies take the shareholder's perspective and allocate investments from a single pool of capital, forcing IT to compete for funding with all other proposed investments.

Establish monitoring processes. An internal audit can provide an objective assessment of program progress during development and installation. Organizations must be willing to cancel programs that get too far off-track.

Demand accountability for benefits. Ensure that the promised benefits are realized. Benefits are unlikely to be achieved (or even monitored) unless an individual is held personally responsible. Savvy companies link the executive sponsor's annual compensation to achieving the promised benefits.

With comprehensive and accurate business cases, your company can make informed trade-offs and agree on IT priorities. Most companies fund all regulatory compliance first. Normally, they next fund programs with the highest return on invested capital. (There are exceptions. Companies occasionally choose to fund long-shot, high-risk, high-payoff programs. Nonprofit organizations may fund programs that further their mission even if they increase costs.) Companies use different priority-setting approaches, but it's crucial to have a consistent and clearly understood way to prioritize all proposed investments — and then use it faithfully.

Business cases enable you to compare projects objectively, so you can undertake them in the order that provides the highest benefit to the company. Use your business cases to make good decisions that will result in corporate success. **54603**

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IT Careers: U.S. Cellular Focus on Customers Results in Innovation

It wasn't so long ago that the standard strategy for wireless or telco companies was fish or be bait. Throughout this wave of massive consolidation, however, U.S. Cellular has maintained that it wants to be mid-pack, preserving its place as a super-regional wireless company that wins – and keeps – business through service.

Formed in 1983, U.S. Cellular's strategy is based on providing superior service to its customers. With 5.1 million customers in 25 states, the company has an all-in churn rate of 1.7% -- among the best in the industry. Leaders and associates work to keep customers, as well as to gain converts, through innovation and technology.

In 2002, U.S. Cellular rolled out its **easy**edge^{SM} product, allowing customers to download applications ranging from sports scores and stock quotes to games and ringtones. In 2004, it introduced CDMA-1X – code division multiple access digital – and built 840 new call towers. Another U.S. Cellular innovation, Traffic Map, provides real-time traffic speeds and times to destinations in select markets.

Happy to be neither fish nor bait, U.S. Cellular's business strategy is to remain independent. The wireless communications company is hiring for both engineering and information services, which combined have more than 1,100 of the company's 7,400 associates. The engineering organization supports every technology that serves its customers. IS, on the other hand, supports the enterprise – every software and hardware requirement needed to operate the business.

"Our business focus has been and will be to focus on understanding customer needs and expectations and delivering products and services to meet those," explains Mike Irizarry, executive vice president of engineering and chief technology officer. "If we do, we'll hang on to current customers and create a reputation such that we garner new customers."

The strategy seems to be working as U.S. Cellular added more than 600,000 new customers in 2004, contributing to revenue growth of 19%. Irizarry and his team oversee wireless towers, network build-outs for new markets, network operations and technological developments. On the heels of the CDMA rollout last year, the team currently is launching U.S. Cellular into the St. Louis market, a major undertaking that will represent U.S. Cellular's second largest market behind the headquarters location in Chicago.

His partner in technology is Karen Kirwan, executive vice president of information services and chief information officer. Her team manages the internal and external technology resources, including offices, kiosks, retail stores and call centers. They ensure the company's technology, software and hardware systems operate without interruption and in the past two years have rolled out a new billing environment, implemented technology to support wireless number portability and launched **easy**edge^{SM}, the wireless data service.

http://www.uscellular.com

Together, they and the other U.S. Cellular leaders focus on removing any obstacles associates may face in terms of meeting the needs of customers – in terms of technology, but also in terms of the work environment, the business processes and the tools needed. "We want customers to know that when you hit send, U.S. Cellular will work whenever and wherever," Irizarry adds.

He views the company as being a fast-follower in technology. "We don't believe we can serve our customers best by being first to market, before we've resolved the issues that come with any new technology," Irizarry says.

"The challenge now is the ability to bring full multi-media services to the mobile device, and that's going to continue to be an exciting space," he says. To enable the technology expansion, he plans to hire at both the corporate headquarters in Chicago and in the field. The positions range from RF engineers and cell technicians to directors.

However, Irizarry stresses that the technical skills aren't as important as attitude. "We need people who have the attitude of serving customers and who will synch up with our values of respecting one another, one team/one goal, and valuing diversity in all its different aspects." The company refers to its culture as the Dynamic Organization, based on customer focus, pride, diversity, empowerment, ethics and respect. Associates like the concept, rewarding the culture with a 96% approval rating.

Kirwan's team mirrors the external technical expertise, internally. "That makes for easy movement," she says, pointing to a career advantage. Kirwan is specific about her hiring requirements and the competencies needed for U.S. Cellular to move forward. In addition to designing the systems and architecture supporting U.S. Cellular's growing organization, the group will continue to focus on setting up operations for new markets, and will push the product launch of the company's integrated wireless phone to provide email and other functions.

This year brings the launch of Press to Talk, a walkie-talkie like ability that combines the rugged communication environment needed for construction and other businesses with the hand-held phone. From an enterprise-system stance, the group is developing a knowledge-based customer value system that will align customer preferences with how call-center operators, sales associates and others interact with each person.

To address these projects, Kirwan needs database analysts, business intelligence managers, project managers and business analysts. "I also need people who can evaluate, select, configure and implement existing applications," she says. Performance analysts look at system performance and optimization, tweaking them to improve end-to-end processing. The telephony segment of her group continues to develop new capabilities to provide interactive and integrated voice response systems. And the high-end of the career path, systems integrators, remain in high demand. "They look across all of our platforms and products to create adaptability," Kirwan explains.

The intensity of both the IS and engineering groups is evident, in the number of projects on the slate as well as the push to adapt to new technologies. "We focus on getting things done, but also on *how* we get things done," Irizarry says. "Are people having fun? Does the group have high morale? That's important if we are to have the highest customer satisfaction."

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Records

through a new private-public collaboration called the American Health Information Community (AHIC).

The 17-member AHIC team will recommend solutions to the HHS for ensuring that electronic medical records are interoperable while protecting the privacy and security of patient data.

Users listed several hurdles facing any effort to create such standards, including a growing list of diverse EMR products, the need for strong security and the variety of IT processes used by health care operations.

For example, at Susquehanna Health System in Williamsport, Pa., only 40 of the 200 physicians use the same EMR software as the three hospitals in the system. The others use technology from other vendors, said Angela Haas, chief medical information officer at the health care provider.

"If my electronic health record can't talk to the one 40 miles away, yet patients are going back and forth [between offices], we are defeating the purpose of an EMR," Haas said.

Sato said his biggest fear is that any new standard will favor the products of one vendor over those of another, potentially hampering hospitals like his that have already selected EMR tools.

Salem this summer will begin deploying an EMR system from Epic Systems Corp. in Madison, Wis.

Privacy Concerns

David House, vice president of information services and CIO at Baptist Health, which operates five hospitals in Arkansas, said that the standard for interoperability will need to include a secure format for a patient identifier for organizations that share health records — one that's similar to the routing numbers used by banks and other financial services organizations.

"If they could give me the format of the number, I could start developing systems around that," House said. "But the minute I assign you a number, there are all kinds of privacy concerns."

In addition, the commission will have to devise a system for handling the disparate ways health care organizations electronically define common tests and other procedures, said John Crooks, IS program manager at the Mayo Clinic in Rochester, Minn.

"The definitions of those data elements are more difficult than the transmission of data," Crooks said. He noted that such standards are necessary to be able to quickly identify national disease outbreaks, such as one resulting from a terrorist attack.

John Quinn, chief technology officer at New York-based Capgemini U.S. LLC's health care practice, agreed that standardizing such processes will be a major challenge facing the AHIC team.

"We have a tremendous problem in lack of standards for processes," Quinn said. "It is not like a simple EDI standard that says this is how we communicate a purchase order. We have to get more toward plug and play."

In a related move, HHS last week also released four requests for proposals for contracts to create processes for data standards, product certification, privacy and security, and the architecture for an Internet-based nationwide health information exchange.

54959

Committee Tasks

The AHIC will have five specific tasks. It will:

RECOMMEND options for protecting privacy and security.

IDENTIFY health IT projects that will provide immediate benefits to consumers, such as systems to ensure drug safety and monitor for bioterrorist attacks.

RECOMMEND a nationwide Internet-based architecture to share health information.

SUGGEST private-sector standards-setting processes.

OUTLINE how AHIC can be succeeded by a private-sector health information community.

Grand Jury Knocks Santa Clara Health Care IT Effort

THE SANTA CLARA VALLEY Health and Hospital System (SCVHHS) has taken a haphazard approach to the planning and deployment of electronic medical record (EMR) technology, according to a recently released civil grand jury report.

Because of that slap-dash approach, the report said, the agency has initiated multiple disparate efforts with no consideration of integration issues.

The grand jury – which acts as a "civil watchdog" for California counties and cities – launched the investigation after hearing inconsistent statements about the status of EMR systems during visits to the SCVHHS and the county's Department of Correction.

The report, released at the end of last month, contended that county health officials, lacking a strategic plan, have taken "the most inefficient, costly and failure-prone approach possible" to building an integrated electronic health record system for the 524-bed Santa Clara Valley Medical Center, eight clinics and a program to provide health services to county jail inmates.

County officials, meanwhile, maintained that the grand jury investigation was incomplete and didn't consider key information.

Kim Roberts, chief financial officer of the county health system, said parts of the grand jury report are "factually inaccurate" and argued that most of the grand jury's concerns center on the county's health care services for jail inmates.

Those services are a small part of SCVHHS services and just reverted back under its umbrella in January after two years under countywide IT control, Roberts said.

As for the grand jury's criticism that it lags behind other health agencies in EMR efforts, she said, "We're not a leader of the pack – county hospitals don't have the wherewithal to do that. We have a tremendous amount of electronic capability. We haven't been sleeping."

The report charged that several SCVHHS efforts to roll out partial EMR systems were undertaken without the knowledge of key county health managers.

The report also criticized a nine-year, $34 million contract awarded in 1999 to Siemens Medical Solutions to integrate information for all health care providers, administrators and regulatory agencies. The contract also required that Siemens build a system that provides a complete view of patient health care information.

That effort is "inconsistent with definitions, policies and practices" that are typical of other local and regional health care providers, the report said.

Roberts defended the Siemens contract, saying that it resulted in automating the SCVHHS billing processes.

Siemens also built applications for other core functions, including patient management, registration and billing, she said.

The report did note that, despite the difficulties, the medical center has made "considerable progress" toward deploying an EMR system, but it still faces some technical problems, including delays in responses to requests for clinical information.

The report recommended that the county develop a task force to plan for and deploy an interoperable EMR system and revisit current design plans.

"This is obviously not a simple problem to solve, [and] there have been many failures in the [health care] marketplace," said Dennis Kotecki, the health and hospital system's CIO, in criticizing the report. "None of that was addressed."

Scott Tiazkun, an analyst at market research company IDC, agreed that such projects are difficult, saying that highly publicized problems with past EMR systems have left some health care organizations hesitant to adopt the technology.

"People have spent a lot of money, [but] the employees were not properly trained, the interfaces were not intuitive – they didn't get any return because the users were not using it," said Tiazkun.

– Heather Havenstein

The Grand Jury Recommends:

- That the Santa Clara County Board of Supervisors form a task force to define, plan, coordinate, implement and fund an interoperable electronic medical record system.
- That the task force inventory current EMR activities and identify existing work that merits preservation and integration into longer-range plans.
- That the task force and the health service CIO revisit current EMR design plans.

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FRANK HAYES ▪ FRANKLY SPEAKING

Invisible Encryption

WHY DIDN'T THIS HAPPEN SOONER? Seagate Technology has just announced a hard disk drive for laptops and other mobile devices that automatically encrypts all data as it goes into and comes out of the drive. Result: Nothing on the drive is accessible unless you know the password. If you lose your laptop with a drive like this installed, that's all you lose. The data is safe from prying eyes — a thief can't even boot it up.

Sure, the FBI, CIA or NSA can probably still get at your data. But the bad guys you're most worried about won't have a chance.

Actually, that probably explains why this hasn't happened sooner. That automatic encryption could get mighty inconvenient.

For example, when users forget their passwords, they don't want to have to rebuild the contents of their hard drives from scratch. They want to tell IT, which resets the passwords so everybody can just go back to work.

And when things get munged on an executive's hard drive and all his un-backed-up presentations, reports and notes appear lost, he doesn't want his drive reimaged. He wants IT to use specialized tools to poke around on the disk and reassemble those deleted files.

That likely won't work with Seagate's "full disc encryption" drives. They're designed to be black boxes that work independently of operating systems. You put the data in and get the data out through a tightly defined interface. But you don't get a lot of room for poking around.

So when seamless hard-drive encryption finally gets here (by next spring, according to Seagate), our tools and tricks for dealing with hard-drive hiccups won't work. We'll hear screams the first time things go wrong. Then we'll hear demands that the encryption be turned off, or that the drives be replaced with conventional hard disks that make data recovery easier.

We'll need to be prepared for those screams and demands. We'll have to explain the business case for seamless encryption (better security, reduced liability risk, less exposure to data-protection laws). We'll want to be ready with easier ways of doing backup, along with a well-designed way to file away copies of those hardware passwords.

Stocking up on asbestos earplugs might be a good idea too.

But as unpleasant as this transition is likely to be, we need it. Data just keeps getting harder to control. We can't seem to stop users from copying it onto laptops and then losing them. We try to block industrial spies and crackers, worm writers and key loggers, but too often they get through. Meanwhile, between the Sarbanes-Oxley Act and privacy laws, the stakes keep getting higher.

We've got to protect that data, and it's clear the answer is encryption.

It's also clear that we won't successfully add encryption ourselves. We can't make it transparent enough. If users have to do anything special, they won't. So even if we provide it, encryption won't get used — unless it's invisible.

And unless it's built into the hardware, where no one can tinker with it, tweak it or turn it off.

Users won't like the fact that we can't do those things. Many of *us* won't, either. We like having that fine control for fixing problems at a low level. Tinkering is in our DNA.

But we can't afford that anymore — not if the price is security. Besides, if we're really going to serve our organizations' business needs, that's the wrong level to be working at anyway. We need encryption to be built in, not bolted on. And not just built into laptop hard drives, but networks and file servers and tape backup systems, too.

That way, we can stop thinking about encryption and concentrate on how IT can make the business better, not just safer.

And that can't happen soon enough. ⬉ 54920

FRANK HAYES, *Computerworld's* senior news columnist, has covered IT for more than 20 years. Contact him at **frank_hayes@computerworld.com**.

SHARK TANK

Look, Just Don't Touch It, OK?

The big red button on the wall in this data center is clearly labeled "emergency shutdown." But coming out of the top of the mounting box is an 8-in. piece of steel conduit with three unconnected wires sticking out. "One worker wondered why the button was still here if it wasn't connected," reports a pilot fish on the scene. "He figured, 'It can't still work, can it? Let's see.' He shut down the entire state government network at 10 a.m. on payroll processing day with one push of the big red button."

That Would Explain It

User calls help desk to complain that her computer started making a loud beeping noise soon after it was turned on. "I asked the user to turn the computer off, which she did," says help desk pilot fish. "But she complained that the computer was still making the loud noise. She was so distressed that I decided to walk over to her building to assist her. But when I got to her office, she wasn't there. In fact, the entire building was deserted. The loud noise she heard was the fire alarm."

Never Mind

State government pilot fish sometimes sends data to county agencies in the form of Microsoft Access database files on CD. Then counties start upgrading to PCs without Access installed, and fish starts getting complaints. "The easy fix is to tell them to use one of their county computers that still has Access on it," fish says. "However, I knew I was in trouble when I asked one caller if any of their other computers had Access and he asked, 'Access to what?' I printed the report to a file and sent him the file."

He WILL Find Something

Pilot fish at this oil refinery is busy doing a software installation in the server room when the safety inspector arrives. But fish isn't worried: Everything's buttoned down, and the inspector doesn't find any safety violations. Finally, inspector turns to fish and informs him, "When you're working on this equipment, a hard hat should be worn."

Disconnect

Support pilot fish gets a call from a user with PC problems. From the user's description, fish suspects memory troubles. He grabs some spare memory so that when he gets to the user's desk, he's ready to test it on the spot. "I was in the process of disconnecting the CPU from the monitor and keyboard so I could open it," fish reports. "The impatient user said, 'Since you're working on that part, why don't you connect the monitor for me so I can continue working?' "

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